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Vol. CLXVII No. 2183 WITH WHICH IS INCORPORATED THE GRAPHIC NOVEMBER 22 1941

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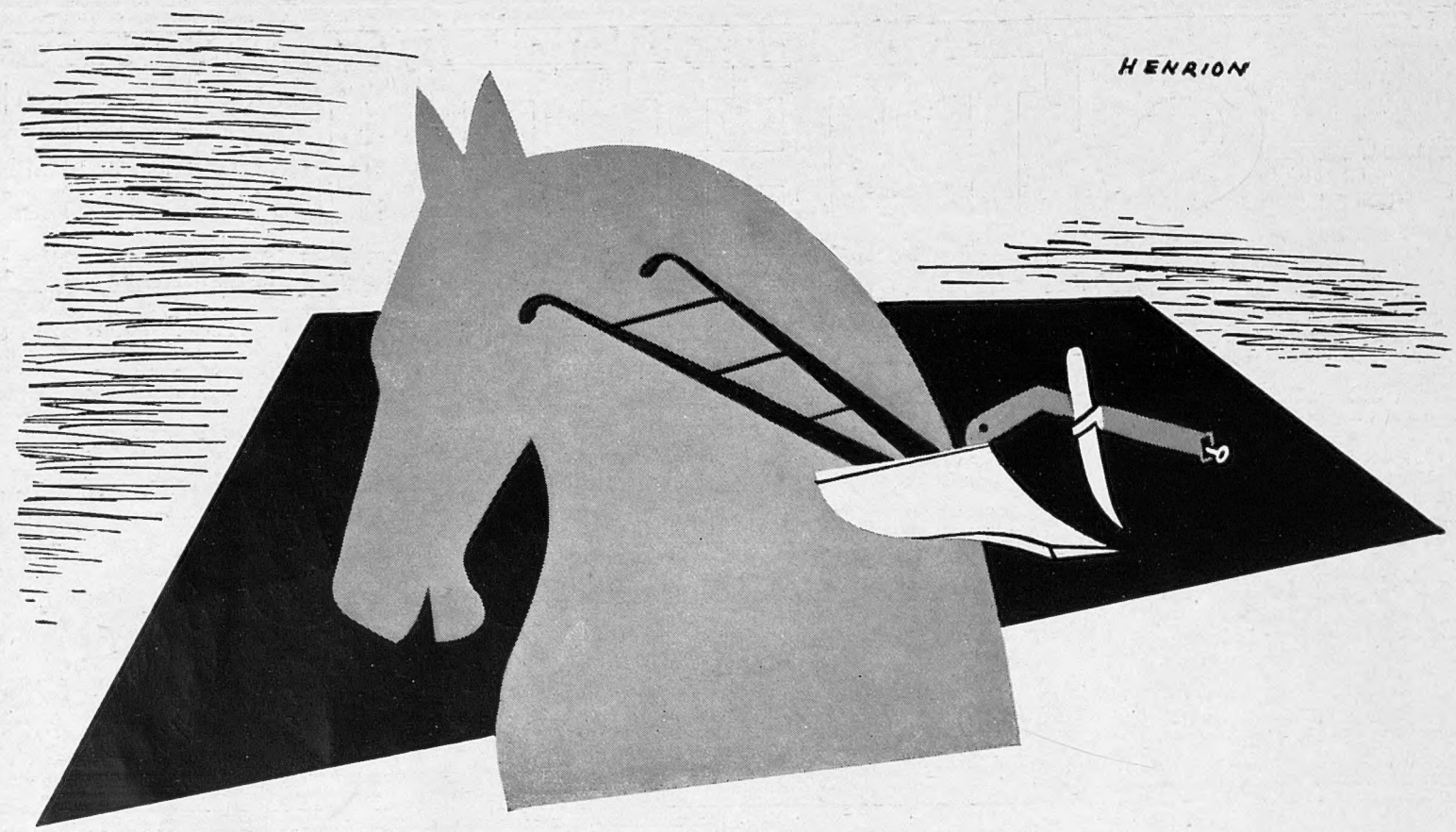


ONCE UPON A TIME

Slowly, laboriously, the plough-horse plods its way across the heavy soil. To and fro it passes, part of the old picturesque landscape of our country. For many farms are still not mechanised.

Britain is at peace. What need for hurry? But over the seas the clouds are darkening. Then . . . September Third, 1939. Britain is at war. The U-boats are out. Will Britain starve?

From one of the greatest of Britain's factories the answer echoes—No! As the tractors stream out in their thousands the face of our land changes. On uncultivated moorland and steep hillside the tough, nimble tractor achieves its fruitful work.

Four million extra acres are under the plough; one of the greatest harvests we have ever known has been reaped this year. For in war, just as in peace—

FORD MARCHES ON

Volume CLXVII No. 2183

The SPHERE, London, November 22, 1941

THE SPHERE

With which is incorporated "THE GRAPHIC"

The Empire's Illustrated Weekly

London, November 22, 1941

THE R.A.F. PRESENT A BRITISH HURRICANE TO THE RUSSIAN COMMANDER OF THE NORTHERN RED FLEET AIR ARM: THE RUSSIAN GENERAL (FARTHEST FROM CAMERA) SUPERVISES ADJUSTMENTS PREPARATORY TO HIS FIRST FLIGHT

The first Russian to fly a Hurricane in the war zone is the forty-year-old Major-General commanding the Soviet's Fleet Air Arm on the northern Front. The aircraft, bearing the Soviet Red Star on its wings in place of the red, white and blue roundels of the R.A.F., was presented to the General. After brief instruction from one of our own pilots, and after adjustments had been made in the cockpit, he then took off. The handing over of the aircraft was made by Wing-Commander Ramsbotham-Isherwood, A.F.C., who commands the British Fighter Wing in Russia. Hundreds of Hurricanes are now being assembled for service on various parts of the Front, and personnel of the R.A.F. wing are engaged in instructing the Russian pilots. The armament and serviceability of the Hurricane fighters are much admired by the Soviet airmen, who are on the average older than our own pilots

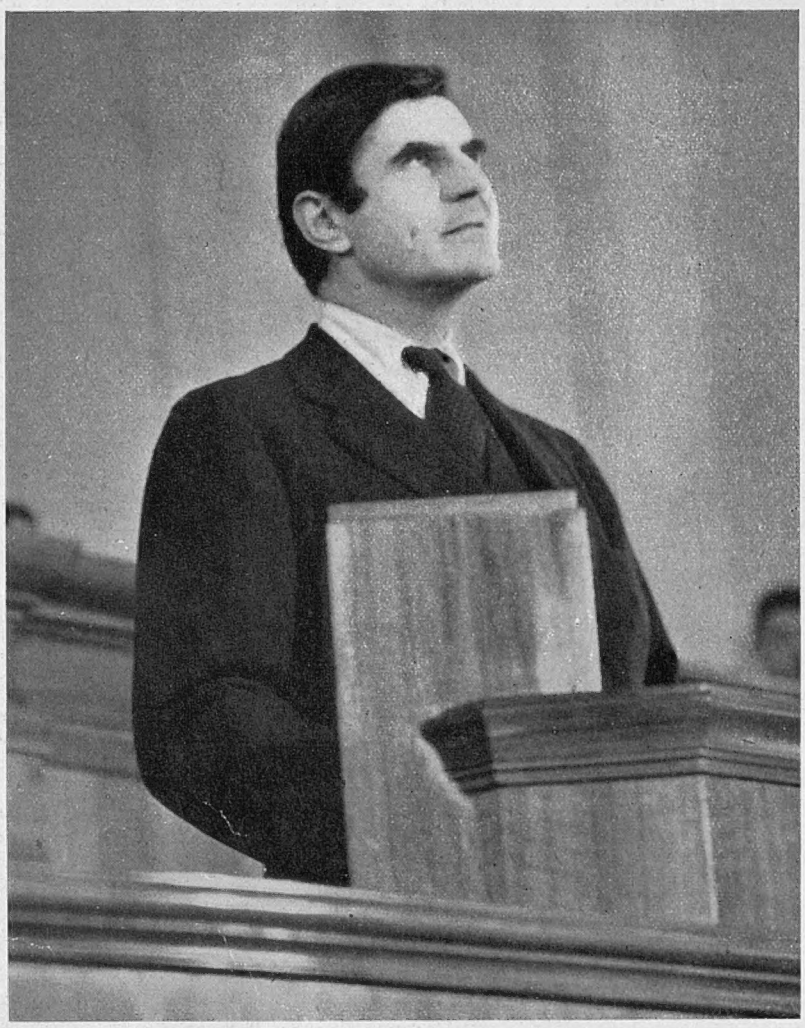
Postage—Inland, 2d.; Canada and Newfoundland, 1½d.; Elsewhere Abroad, 2d.

A WAR NEWSLETTER—No. 116

1, NEW OXFORD STREET, W.C.1.

Our Creed Restated.—

I suppose I share with thousands of thinking Englishmen a sense of frustration and muddle as a result of the many, diverse, "semi-official" voices which for ever tell us what we should think and do and believe in these times of crisis. It seems to me very necessary to restate our essential creed and define our essential attitude, to-day on the eve of a newly-promised and still more terrible testing-time for our country. Of all the voices from Westminster and Whitehall, from the Bench of Bishops and the Street of Ink, from the armchair and the factory and the "Operations" room, one voice only seems to me worth listening to. One speaker only seems to me to have maintained in the last six months (a long time for consistency in war) a consistent policy, realism, a sense of humour, a sense of proportion, a rare simplicity; to have grasped and held on to the essential thread in the complex tapestry of this war picture—our Premier, Mr. Churchill. I have closely examined his speeches, made since the Russian War altered so profoundly the course of our struggle for existence, and I think he has indeed kept the issue simple and clear. As I interpret his words to the public, this is what he would have us keep before our eyes: **1.** There is only one supreme task before us at present—to defeat Hitler and to stamp out the curse of Nazi-ism from the face of Europe and Civilisation. With Hitler, or with any man or Government remotely tinged with Hitlerism, we will never treat, never make peace, never compromise. This supreme and tremendous task can never be accomplished unless every man in civilisation who is not openly pro-Nazi gives 100 per cent. support to this cause, serving it as his condition and ability and orders from his leaders dictate. **2.** It does not matter what agency strikes the final blow that kills the dragon. If the German people themselves rise up and exterminate Nazi-ism or deliver the dragon bound into the hands of justice, that will serve our purpose, provided nothing that is remotely Nazi remains at large. (I find nothing expressed or implied in his utterances to suggest that we will "never treat with a *German*," a slogan which indeed makes pure nonsense to a realist, even one with bitter knowledge of recent history.) Whoever it be who stamps out Nazi-ism, that agency is our friend. It matters not what his politics, his creed, his language, his past record, his "peace" intentions; while the war continues and Hitlerism remains at large, there is an amnesty from political controversy among all allies of freedom's cause. **3.** It follows that all voices which go beyond this vital issue are to-day irrelevant and confuse and handicap the war effort. It follows that all eyes which look beyond the hour of the downfall of Hitlerism are switched away from their vital business in the chain of war-production. It follows that those who shake their heads over the menace of Communism, or of Prussianism, that those who plan a new order of pure socialism for post-war Britain, or who dream of the restoration of British institutions now lying dormant, are unpatriotically wasting breath and energy and confusing the simple, fearful issue. **4.** In a sentence, if I rightly interpret our Premier's creed and message to us all, we have, every one of us, to grasp one vital fact, that our supreme testing-time is still to come, and that we shall come through it only if we give our best all day and every day to the job of exterminating Hitler and Hitlerism. Until that is accomplished, every man who speaks beyond that brief is creating muddle and dissipating effort and dividing the ranks. But *when* Hitlerism is bound in chains, and not before, then we may release thinkers to plan for peace, then party-politicians may air political theories, diplomats may air ethnological theories and a hundred diverse opinions may ventilate the air again. If that is the



THE AMERICAN AMBASSADOR MAINTAINS A TRADITION: Mr. Winant attended the ceremony of the election of the Lord Mayor of Plymouth a few days ago, when Viscount Astor assumed the office for the third successive year. The U.S. Ambassador perpetuated what, since the time of Walter Hines Page, has become a tradition—that an American Ambassador shall pay at least one visit to Plymouth and there make a public speech. The mayoral luncheon is usually held in the Assembly Room of the Royal Hotel, but, as this building has been damaged, the Lord Mayor's guests ate a simple wartime meal at a British Restaurant

Premier's creed—and I believe it to be so—nine-tenths of the talk and the writing of the past months by peace-planners, new-order builders, by bishops, and ministers and publicists of all types, by Vansittarts, King-Halls and Bedfords, has been sheer irrelevance, a gross waste of energy and a dissipation of united effort, as unpatriotic as it was ill-timed, and that quite apart from the sense, logic and popular appeal of their arguments. If my conclusion is not too bald to be accepted as logic, it must give us all a sharp but healthy *jolt*, and a new and stricter conception of our duty this winter.

"Mare Nostrum." —

The British Navy at least is safe from the arm-chair strategist and critic. What a long immunity! Does it extend from the shooting of Byng? Even *pour encourager les autres* no arm-chair patriot has in this war ventured to cast a stone at the inactivity of the British Navy and Merchant Marine! And I don't think I need begin, with the news of the latest stroke in Mussolini's own sea ringing in my heart. Ten little nigger boys, all with full bellies, at one fell swoop, and in face of numerical superiority of warships! What is numerical superiority worth? What to-day does a Fascist sailor regard as satisfactory numerical superiority over the R.N.? Would 3-to-1 superiority in all classes of warships induce the Fascist Admiral to give battle, or the British Captain to judge discretion the better part? I doubt it. If the Germans have been driving their Fascist galley-slaves to sea with whips hitherto, must they not now use scorpions? No, I would not be an Italian sailor plying the Duce's own sea on his lawful occasions to-day. Nor would I choose to be a Fascist naval officer meeting a Fascist merchant seaman in the battered dock areas of the port of Naples. I would not choose to be an Italian in any guise of servitude and shame and disillusionment. He who takes the sword shall perish by the sword; he who rattles the sabre shall, before he perish, rue the day when sabres were invented. Even Gayda, in his padded arm-chair.

Paper Salvage.—

I believe that it is impossible to-day to overstate the case for the urgency of stimulating paper salvage. Whether your private interest in the matter be general or particular, whether you wish vaguely to help the war effort, or to "get something off the rates," or to tidy up a junk-ridden cupboard or two, or, more particularly, to strike a blow for the heavily-handicapped professions of literature and journalism, the duty and the work are essentially and urgently *yours*, as a good citizen and as a war-worker. In this *one* aspect of war work, my conscience is clear. I have been from the start a keen paper-salvager, and it is really quite simple, if tiresome, work. *Anybody* can make a habit of *some* of the duties, and anybody with a car can make a habit of *all* of them. I have not used a single sheet of writing-paper or a single new envelope since 1939. I have cut out for use the blank spaces on typescripts and print, and obtained thereby all the casual paper I need as a writer. I have cleared my own room of six large meal-sacks full of paper, ranging from nine original MSS. of old books, fifteen complete galley-proofs, some corrected; family letters dating from 1750; eleven old family wills or settlements on parchment; 2,000,000 words of old SPHERE "Newsletters"; and about 250,000 words of old articles and reviews written for London "dailies." Also five unpublished MSS. It was a joy to get rid of what was, after all, but sentimental junk. I feel all the freer for scrapping the past.

The Simple Routine of Paper Salvage.—

Every piece of paper that comes to this house, and cannot be used again, is put in a sack; separate sacks for brown paper and cartons, for newsprint, and for correspondence papers; and these sacks, together with those put out by my nearest neighbours, I take in my car, when passing in that direction, to our voluntary disposal organisation, which is efficiently run. Every quarter, at least, I find the stacked loose-box, in which this mass of sacked paper is collected, has been cleared for refilling. And the work goes on manfully. "All local councils have been instructed once more to collect waste paper." Some private citizens may justly feel cynical about this announcement. The war and the paper drive have been going on now for nearly two years, and still some of these councils are the worst wasters and the worst savers of paper. Still we are deluged with what are in wartime utterly needless and redundant notices, reports, guides and warnings, from county councils, rural councils, A.R.P. services, county libraries, Clerks of the Peace, and so forth. Still, from the military fountain-head, tons of irrelevant print come down for distribution to rustic Home Guards; still from every department of State the forms and instructions are duplicated and overlapped. Banks, tradesmen, valuers, insurance companies still circularise us on "cream-laid note" of enormous size. None of them stoops so low as to use envelopes twice. If the need for salvage is urgent—and it *is*—the example at long last should be set by Government Departments first, and next by Local Government and trade organisations. Up to now the main impetus and example have come from a minority of the private citizens of Britain. It is no exaggeration to say that. It is a grave indictment.

The Complicity of Pilate.

—To err is human, and even a journalist *may* be human. I often find in my "Newsletter" and other articles a slip, or "literal." It is rare to find a "bloomer." In two consecutive issues recently I made a "bloomer," none the less! In normal times, a journalist is well safeguarded. He writes his "copy"; he corrects it in MS. or typescript; he goes to the newspaper office and corrects it again in galley or page-proof for press. And down in the bowels of the composing-room there sits an anonymous wizard—a man of the highest education and profound knowledge and a hawk's eye—who lets no error pass; corrects the writer's spelling, grammar, sense, facts, and even style, and is nearly always right in his emendations. In war, it is very different. I do not put my "copy" through the Press in galley-proof form, and the wizard is correcting (I expect) the errors of some Government Department's brochure writer—the modern "best-seller." So it was that, by an aberration, I branded Pilate instead of Judas for accepting thirty pieces of silver for a supreme betrayal; and a few days later wrote "complicity" for "complexity." My readers "came upon me like bees." Such a chance was irresistible. Bournemouth, Bath and Cheltenham woke up and buzzed. Vicars, D.S.O.s, retired colonels, "they rode and they ran." They got me down and rubbed my nose in it. I don't blame them. They have to endure my "superior airs" week after week in silence. When I give them a handle, they snatch it. But I cannot humbly disarm criticism with Dr. Johnson's "Pure ignorance, Madam" I am nuts on the Bible. I can "distinguish between" Judas and Pilate. My old match-box bears the signatures of four grateful undergraduates whom, thirty-five years ago, I successfully coached for "Divvers." It was worse than ignorance, it was aberration. Such is war! But what a comfort to know that our reserves of man-power and war-work-hours are still vast, and that men can still afford stamps and find paper and envelopes for such vital labours for truth and accuracy.

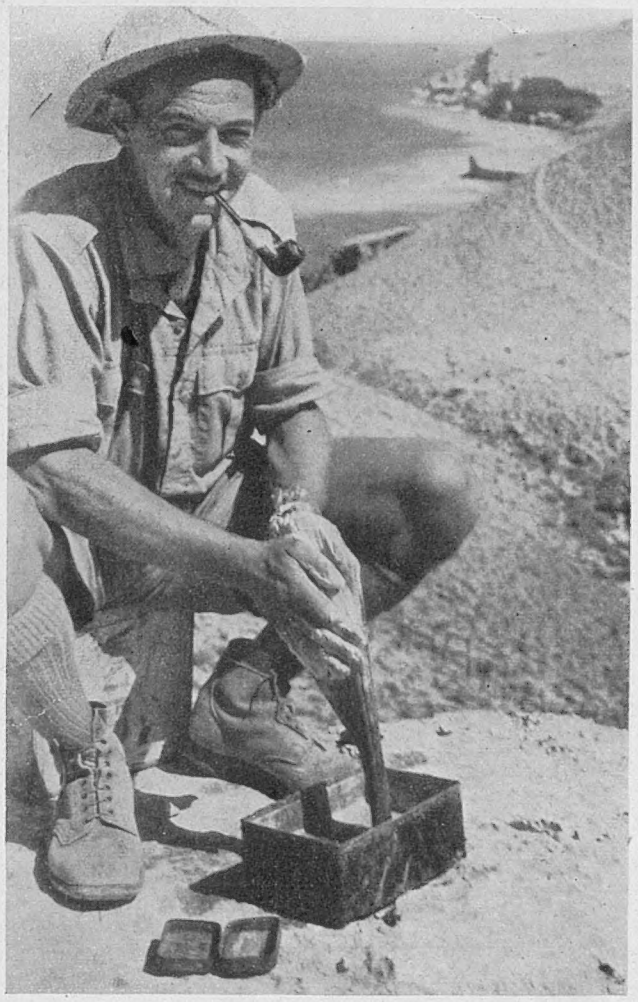
THE OLD STAGER

FROM THE WESTERN DESERT

A DIFFERENT KIND OF PICTURE FROM TOBRUK! The garrison have sweltered in the burning heat of the Western Desert by day, but now it would seem as if the weather at Tobruk is changing. This picture was taken after a very heavy rainstorm which occurred a short while ago. It followed on a sandstorm which had lasted all day. The water came rushing down the wadis and flooded many of the tents. Kit and furniture had to be removed and dried out elsewhere until the floods had abated

GENERAL ROMMEL INSPECTS THE RUINS AT "FORT" CAPUZZO: This is a "Fort" no longer, although once it was regarded by the Italians as a strong defensive position on the Libyan-Egypt border. It has changed hands so many times during the fighting in the Western Desert, and has suffered so much in the way of bombardment, that it is now a heap of ruins. On the left of this picture is General Rommel, the Nazi Commander in Libya, inspecting the site of the Fort

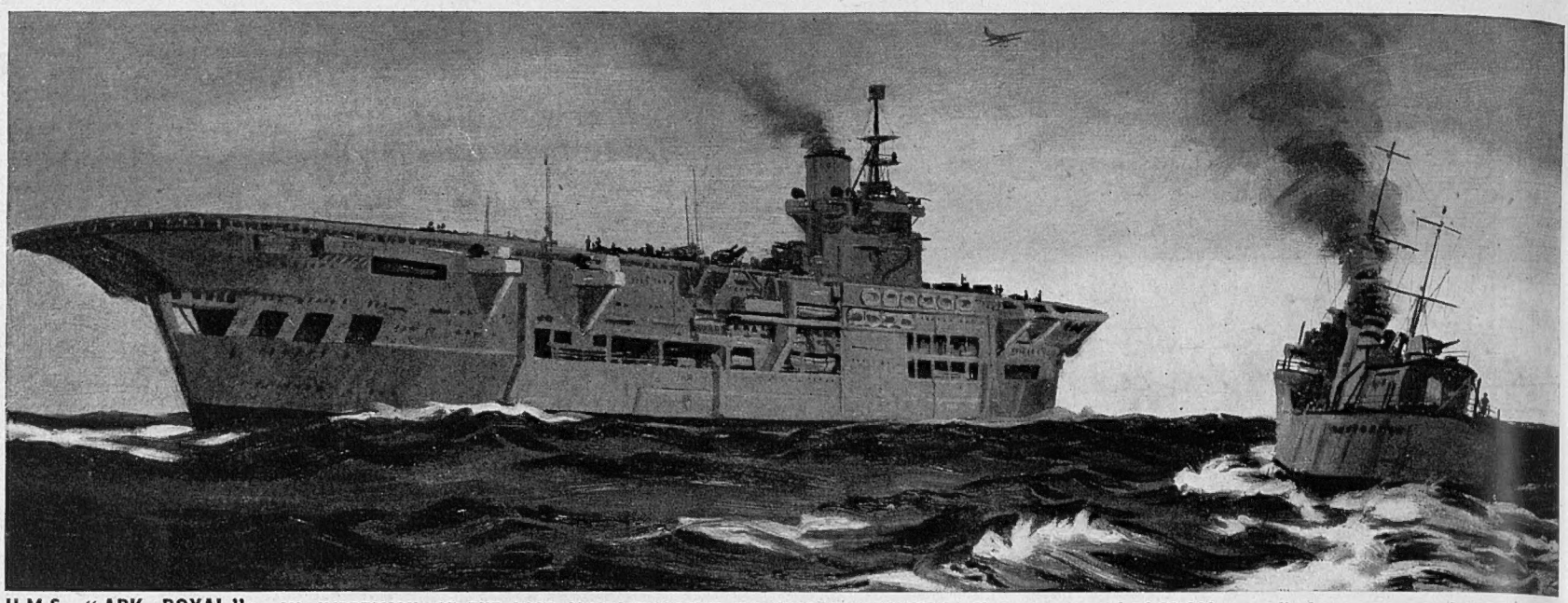
ITALIAN NATIVE TROOPS DRAWING WATER FROM A DESERT WELL: Water is one of the principal difficulties in the desert, especially now that such large numbers of men are concentrated there. Much of the Italians' and Germans' drinking water has to be brought across the Mediterranean, or in large water-wagons from Tripolitania—both of which are very difficult undertakings just now, owing to the activities of both the Royal Navy and the R.A.F. The water obtained from the local wells is not plentiful, and often brackish and unpleasant



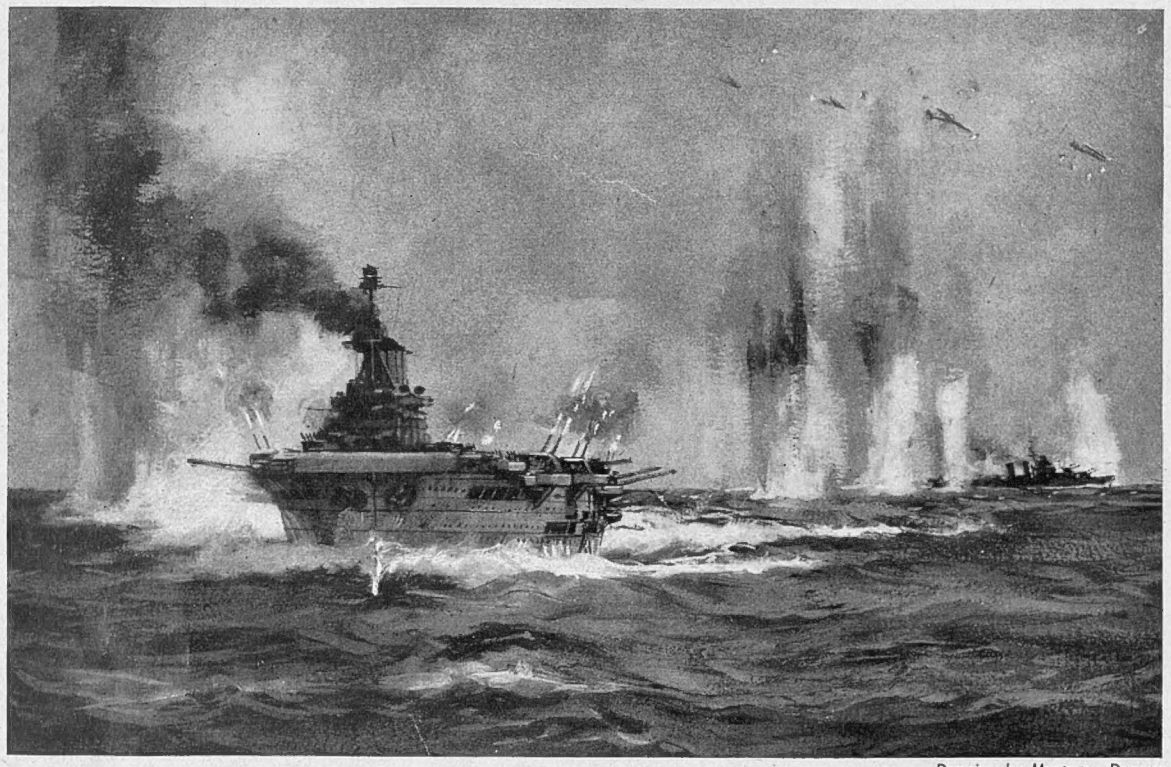
WASHING DAY IN THE DESERT: The Australians have a laundry service in Tobruk, and several men are detailed from each company to do the washing in a sheltered wadi. But there are places where the men have established a rivalry with the official laundry service; and here an Australian is seen doing his own washing. Water is not too plentiful, and the washing-tub is merely a small biscuit-tin

CONGRATULATIONS FROM THE COMMANDER-IN-CHIEF: Officers and men of the crew of a lighter, who have done great work in carrying supplies to Tobruk and who have received a signal from Admiral Sir A. Cunningham for attacking an enemy submarine. Two of these men are officers and two are ratings

A BAND OF CAPTURED GERMAN AIRMEN: Two German aircraft which attempted a raid on the Suez Canal zone on the night of October 7-8 were both destroyed. One, which carried a crew of five, was brought down following interception by our night fighters east of the canal. Here the two crews are seen in captivity in Egypt



H.M.S. "ARK ROYAL": AN IMPRESSION OF THE LOST AIRCRAFT-CARRIER BY MONTAGUE DAWSON: She was a vessel of 22,000 tons displacement, completed in 1938, and carried a complement of 1,575. She was lost on November 14



Drawing by Montague Dawson

ONE OF THE MANY ENEMY ATTACKS IN THE WESTERN MEDITERRANEAN: An attack by enemy aircraft in the early summer of 1941—one of four which were all launched against the carrier on the same day

The LOSS of "ARK ROYAL"

THE £3,250,000 *Ark Royal* was hit by a U-boat torpedo in the Western Mediterranean on November 13. But for fourteen hours she managed to struggle towards port, and only sank when within 25 miles of safety.

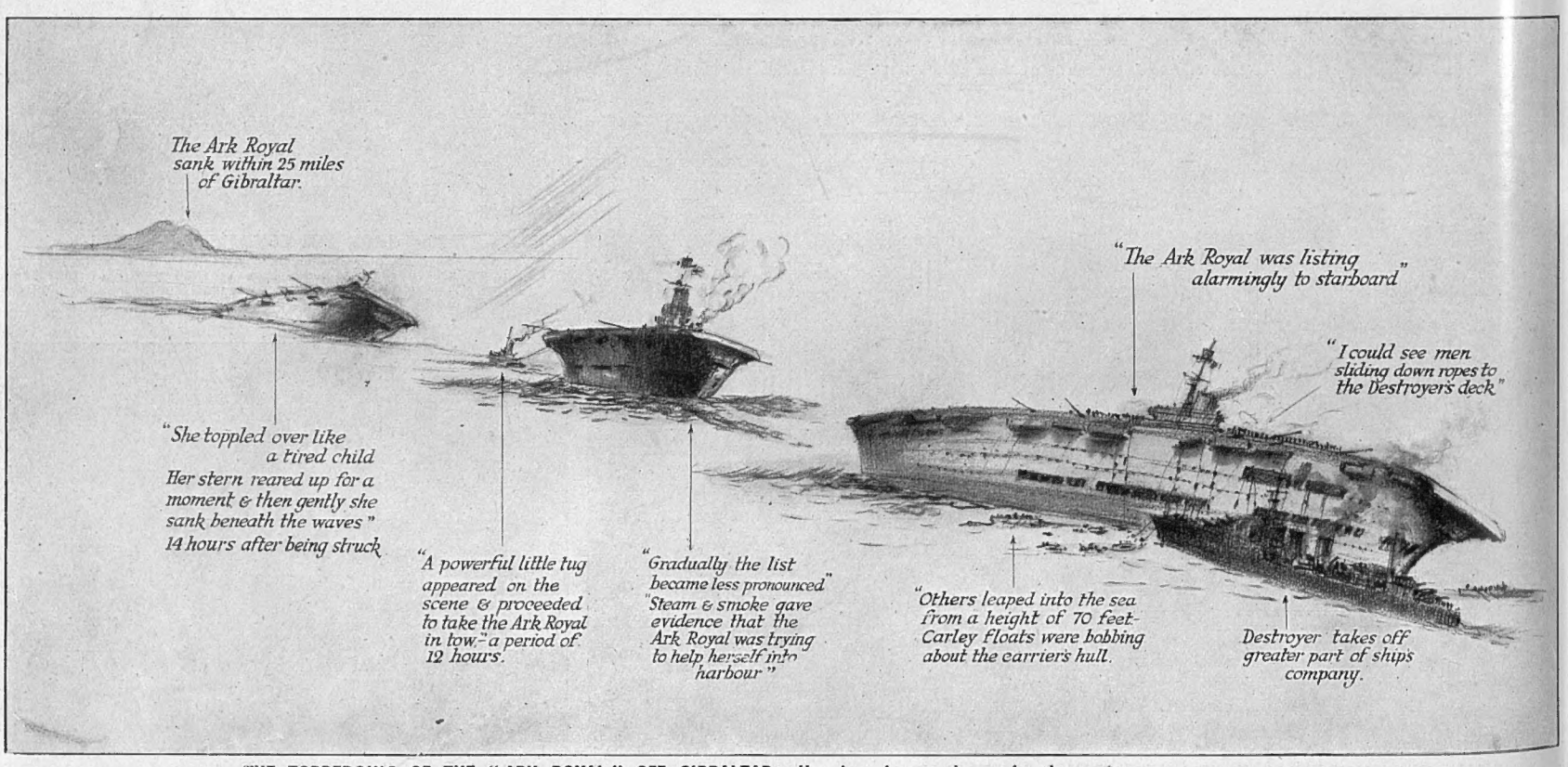
According to the report of an eye-witness, "it was just as we were preparing for the final run into the docks at Gibraltar that someone put his head round the door of our wardroom, where we were at tea, with the breathless announcement, 'The *Ark Royal* has been torpedoed!' Orders were given for us, in company with other escorting destroyers, to circle the *Ark Royal* to ward off any attempt by the attacker to deliver a *coup de grâce*. As we raced in a wide circle I could see the list was gradually worsening."

Soon it became obvious that damage-control parties in the crippled ship were working heroically to get her back on a more even keel.

Gradually the list became less pronounced, and though the *Ark Royal* never regained her upright stature, there seemed good ground for hope.

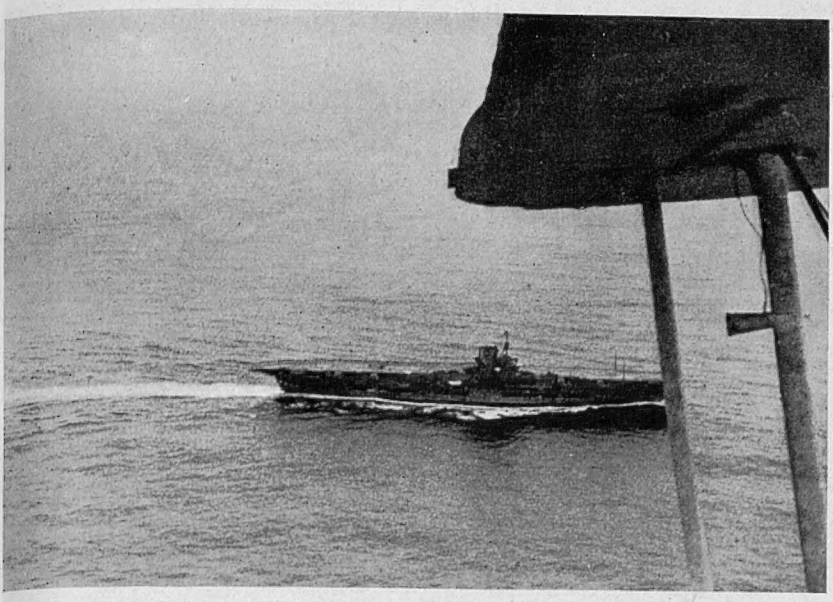
Those rescued were taken into Gibraltar, and of her total complement of nearly 1,600 only one man was lost.

CAPTAIN L. E. H. MAUND, who stayed with his ship to the last

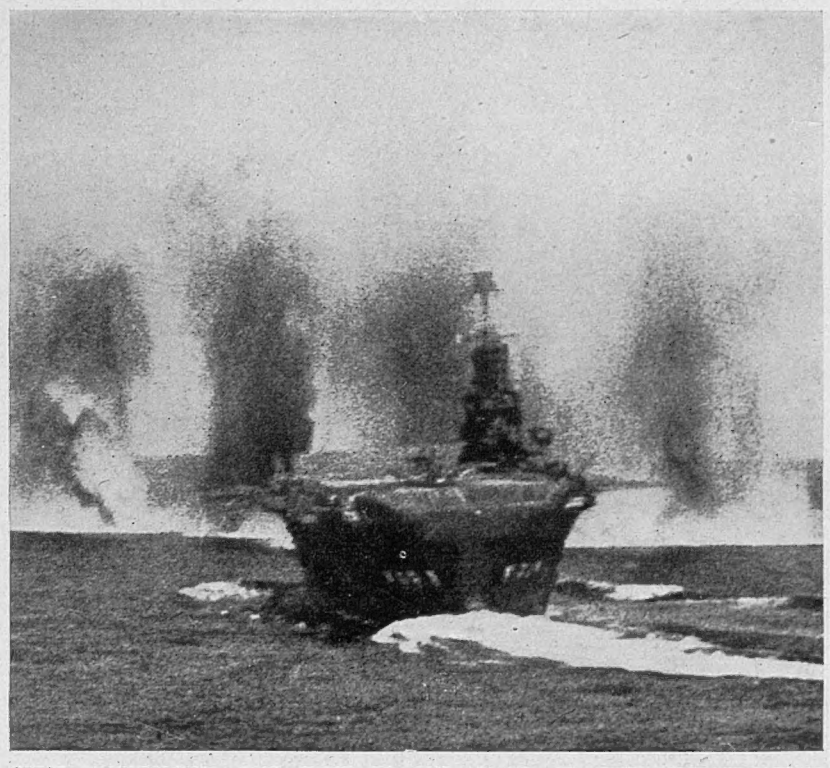


THE TORPEDOING OF THE "ARK ROYAL" OFF GIBRALTAR: Her last hours shown in three stages—*Drawing by Percy Home*

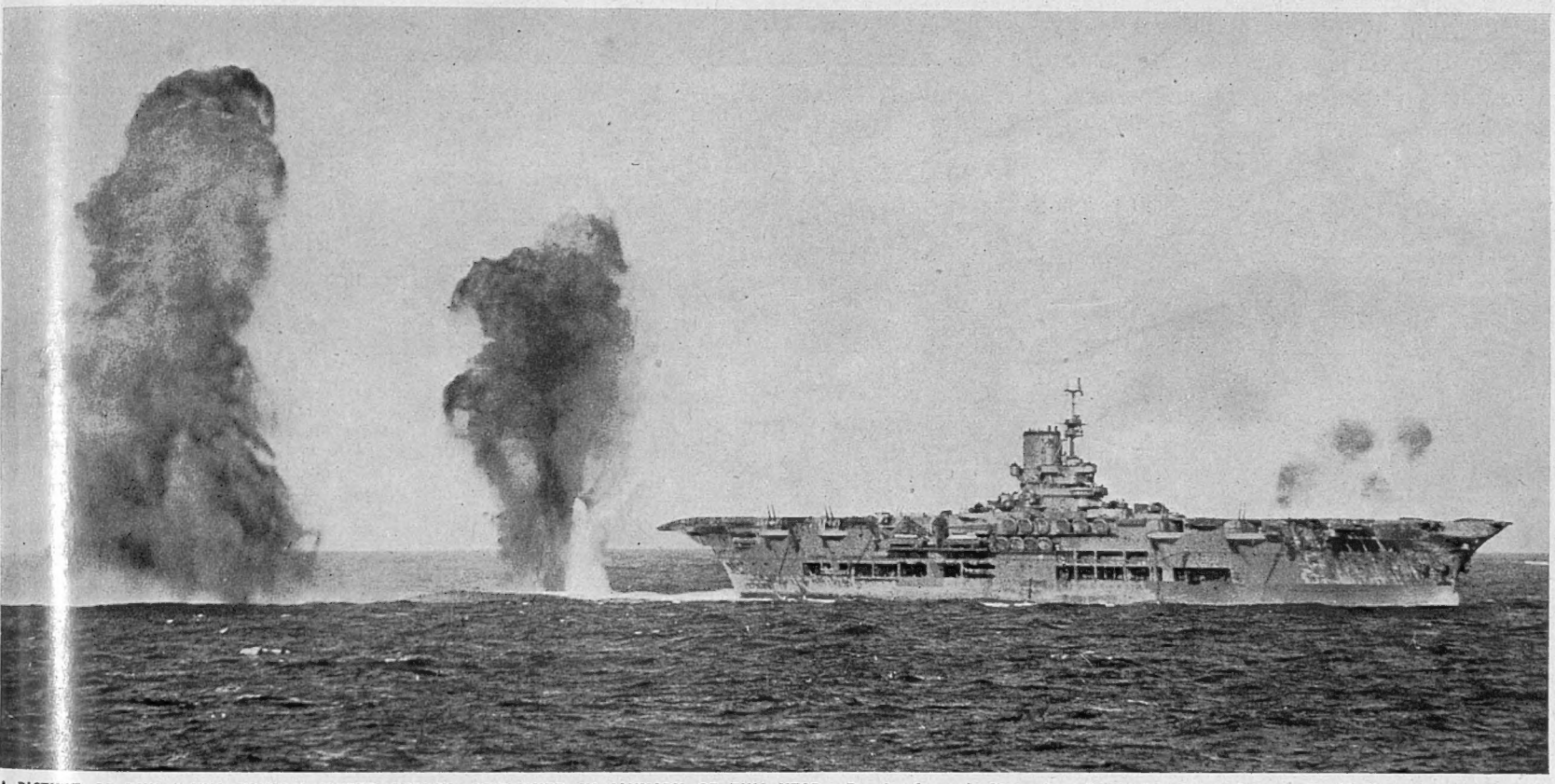
For nearly twelve hours after she was torpedoed the *Ark Royal* struggled along towards Gibraltar, but at 4.30 on the morning of the 14th Captain Maund was compelled to give the order to abandon ship. She sank two hours later, when only some twenty-five miles from port. It is gratifying to record that of her total complement of nearly 1,600 men, only one was lost. The various stages in the *Ark Royal's* last hours are portrayed in the special diagram reproduced above



THE "ARK ROYAL" AS SEEN FROM ONE OF HER OWN AIRCRAFT DURING A PATROL: Captain Maund revealed, in his address to the rescued crew of the *Ark Royal* at Gibraltar, that the famous ship had sailed 205,000 miles and had been engaged in thirty-two war operations. Since the first days of the war she was the special target of Germans and Italians alike; and on many occasions her loss had been reported by the radio of both countries. The *Ark Royal* has certainly paid this country "good dividends," as Mr. A. V. Alexander said: she was ordered in 1935, begun in September of that year and completed in November 1938. Her cost was nearly £3,250,000. The sixty aircraft which she carried aboard were a never-ceasing scourge to the enemy

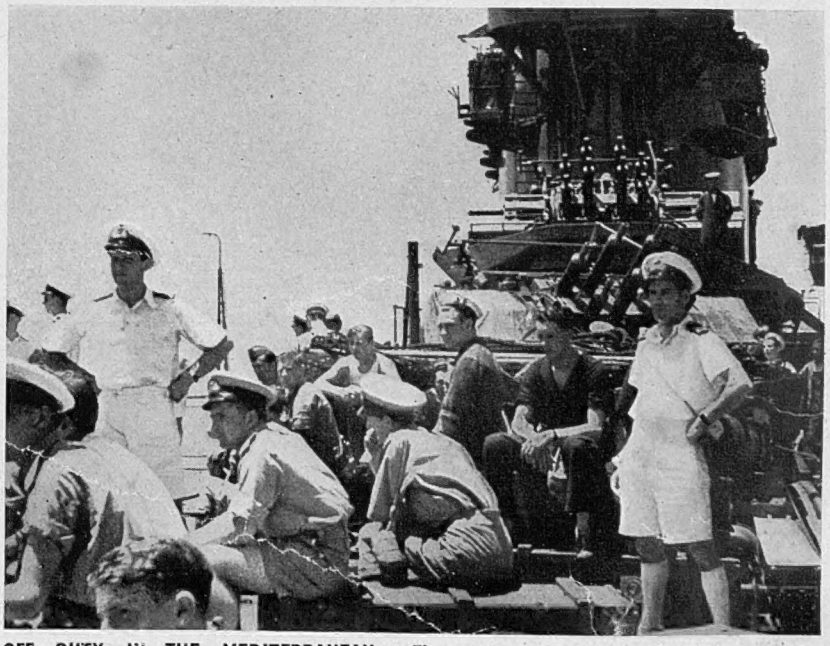


GREAT WATERSPOUTS RISE CLOSE TO THE BOWS OF THE AIRCRAFT-CARRIER DURING ONE OF THE MANY ATTACKS SUSTAINED BY THE "ARK ROYAL"



A PICTURE OF THE "ARK ROYAL" UNDER ATTACK, PUBLISHED IN JANUARY OF THIS YEAR: Bombs from Italian aircraft send quite a lot of the Mediterranean into the air, but fall astern of the aircraft-carrier!

AIRCRAFT RANGED ON THE DECK OF THE "ARK ROYAL" READY FOR FLYING OFF: The carrier was able to accommodate sixty aircraft, although originally seventy-two were provided for



OFF DUTY IN THE MEDITERRANEAN: Fleet Air Arm personnel seated on the wide flight-deck during a quiet spell. Note the heavy pom-pom armament to repel attack from the air

A CONFERENCE IN PROGRESS AT THE HEADQUARTERS OF THE ANTI-AIRCRAFT COMMAND: Lieut.-General Sir Frederick Pile, D.S.O., M.C., the General Officer Commanding-in-Chief, Anti-Aircraft Command, since 1939, has a session with his principal officers

In this group, from left to right, are seen the following: Lieut.-Colonel S. Lamplugh, Major-General T. C. Newton, Lieut.-Colonel G. A. K. Meyer, Major V. S. Daniell and Lieut.-Colonel E. A. Howard

The WORK of the ANTI-AIRCRAFT COMMAND

Since last winter, a great expansion of anti-aircraft guns has taken place—not only in the rings which defend big cities, but at all points where the enemy may seek his target. Not only are there more and better guns, but the team spirit essential to success in such difficult operations has spread until the gun crews all know each other's reactions when in action. Hitting a target miles high, which is travelling at over 200 miles an hour, may seem an impossibility, but it is accomplished with amazing regularity. Some of these pictures were taken at a heavy A.-A. battery which has already accounted for a record number of raiders. Women are now participating—with men—in the operations of the A.-A. Command.

TWO FAMOUS BRITISH JOCKEYS WHO ARE NOW SERVING IN AN A.-A. BATTERY: Britain's champion jockey for the present flat-race season is Harry Wragg. Another rider who has done very well is R. Perryman. Both only ride when they get leave from their real wartime job—that of anti-aircraft gunners. Here the two well-known jockeys are seen at the sights of their gun—Perryman on the left and Wragg on the right

TWO MEMBERS OF THE CREW OF A HEAVY BATTERY, which has accounted for a record number of raiders, inscribing on the propeller blade of one of their victims (a Junkers 88) a list of their successes

SWINGING THE TELESCOPE to focus on a hostile plane : When spotted, "Plane!" is shouted, and then the height-finders get busy

THE GUNNERS ARE ALWAYS ON THE ALERT, day and night : Their "rest" periods are spent on the very doorstep of the guns they serve

GUNNERS AND A.T.S. GIRLS WORK SIDE BY SIDE ON SOME GUN SITES : This picture was taken on November 11, Armistice Day, during the observation of the Two Minutes Silence

GUNLAYERS WORKING SIDE BY SIDE : This is a responsible duty, for it comprises elevating and traversing the gun when in action

AT A GUN POSITION IN THE LONDON AREA : Gunners dash to take up their stations from the sleeping-huts, where they live under the shadow of their guns

AN OFF-DUTY MOMENT : The inevitable game of football at a London Area gun site

ROOSEVELT HAS A HARDER JOB THAN WOODROW WILSON

What are the Facts Behind the Isolationist Movement in the United States; How Strong is the Movement; And what Measure of Support Does it Receive from the American Nation?

By FERDINAND TUOHY

OFFICIAL tact does not alter the fact that many people in this country are critical of the American lag in war effort. A year after declaring itself to be the arsenal of democracy, only 15 per cent. of total United States production is said to be for war purposes. Criticism is not uttered in a spirit of "why aren't you in this war good and strong instead of fiddling round?" so much as of "you've told us so often you were behind us—well, is this to be the rate of your backing? If so, we've been led to hope far too much by spokesmen of both Governments." But there's no lack of gratitude for what has been facilitated by "unsordid" Lease-Lend and by the U.S. vanguard-Navy.

My belief is that British disappointment is traceable to a playing down of the Isolationist Movement which, it has been the fashion to tell us, is just an hysterical minority affair, and its leaders so many exposed cranks or Quislings. Americans themselves have not done as much as they should and could to alter this picture in minds here, or rather to draw a more correct picture of what President Roosevelt is up against in seeking to deliver the tools. There has been too much talk of bunkers on Capitol Hill and too little presentation of restraining influence and opinion among 135,000,000 very diversified people. And this is to do the President a big disservice, since one has no hesitation in saying that he has a harder job than ever Woodrow Wilson had in guiding America into the last war.

Just one brief comparison. Wilson was re-elected President in 1916 on a "he kept us out of war" platform. Yet in early 1917 he declared war. What were the compelling factors leading to that declaration? Unrestricted sea warfare, which, among other things, caused the deaths of several Americans in the cross-channel steamer *Sussex*; the revelation that Germany was plotting an attack from Mexico; and German sabotage and general impudence in the United States. The *Lusitania* has long receded into the background. Well, take to-day. There's unrestricted sea warfare, from which Americans are increasingly suffering. There are revelations of Nazi plotting in South America, which lose nothing of their force from the fact that the Japanese are ranged against the United States in this war. And there is, domestically, sufficient evidence of Nazi-inspired sabotage. Topping things, U.S. warships are being sunk by admitted German action. Yet do such factors enable Franklin Roosevelt to emulate Woodrow Wilson and lead a nation to war? They don't even enable him to extract from that nation more than a half-hearted preparatory effort, if we are to believe the stories of a continued flood of luxury products, refrigerators, automobiles, and so forth, from factories and plant which might be competing with Hitler's harnessing of Continental Europe into total war production.

The only possible explanation is that disagreement with or tepidness towards the President and his foreign policies are wide and extensive and that the spearhead of this antagonised America, the Isolationist or "America First" Movement, cannot be dismissed as just an hysterical crusade whose active membership has been put as low as 20,000. If so, never has so much pressure been exercised on so many by so few!

The majority of Isolationists are farmers, lower middle class, and working class, and by far the heaviest proportion of these social strata are late arrivals on the American scene: either the children or the survivors of that migration spate which hardly slackened through the '80's and '90's and during the first two decades of this century. In that interval America accepted over 20,000,000 Italians, Poles, Scandinavians, Russians, Hungarians, Greeks, Rumanians, Czechs, Slovaks, Spaniards and Levantines. One might think that such stock would want to secure the respected freedoms of parent-lands so lately left or so present in the blood, but recollect that these millions went to America in order to cut adrift from their hard lots in Europe and that such outlook lingers in the children, the under-forties of to-day.

Looming behind all these, ethnologically, are the Germans and the Irish, 5,000,000 of whom emigrated to America in the middle of last century. Their descendants may well number 25,000,000, of whom the German element has been gingered up by such organisations as the Nazi Bund, now dissolved. The Irish element didn't need gingering and it probably remains the most anti-British force in America, as it was when I worked there, whose influence is not lessened by so many Irish-Americans being prominent in religious, political, municipal, and police affairs (remember how Europe's police forces have been heavily Quisling and New Order).

Yet there's no arguing the magnitude of the "stay out" racial call or that a high percentage of those involved are engaged on productive work (farms, workers around towns and cities).

Even as insufficient attention has been paid to the drag exerted by so many foreign-born or first-generation Americans (like Lindbergh), we on this side of the ocean have over-estimated the pull exerted by elements favourable to us. Those embodying the Anglo-Saxon inheritance occupy a range of key posts vastly disproportionate to their numbers in the community. When a Senator Pepper pops up continually, and is as vehemently anti-Nazi as Mr. Churchill himself, he fills the headlines, but isn't really of much significance outside his native Florida, which, like a great part of the South, is for unadulterated intervention. Then there are the Jews. The Jews exercise considerable influence in the Press and on the screen and radio, so that when we see each of these instruments heavily pro-Ally, it would be unwise to run away with the idea that they faithfully represent public opinion. A minor cause of American Press hostility to Lindbergh personally derives from the state of smothered war that has endured between the ex-Flying Fool and the Press ever since 1932, when Lindbergh had good reason to rebel against the treatment he got from the newspapers in connection with his baby son's murder.

SHAPING UNITED STATES POLICY IN THE ATLANTIC OPERATIONS: In the centre of this picture is Admiral Husband E. Kinmel, Commander-in-Chief of the United States Fleet: he is conferring over a map of the Atlantic with Captain W. S. Delaney (on left), his Operations Officer, and Captain William W. Smith, his Chief of Staff. This official picture of their conference was released by the Navy Office in Washington on October 29

Göring was extraordinarily lucky to get Lindbergh as standard-bearer in the United States. Lindbergh may be a figurehead, an automaton. Here is a letter extract: "To listen to him speaking or to read his articles is to be certain that he is merely repeating lessons well learned. He makes mistakes when he comes out with a *cliché* identical with some vaporing by Hitler a week or so previously." That may be so. But the fact remains that Lindbergh was the hero of this America, especially youth's hero, and that such heroes do not fade so easily. Lindbergh is hated and called a bad-tempered, ungrateful, ill-conditioned blank, from one end of the United States to the other. But he also has a direct appeal to the oncoming generation-in-possession, a small section of which has already constituted itself into Lindbergh's Young Minute Men of the Republic.

Lindbergh and his "America First" crew—Wheeler, Flinn, Nye, Cudahy—are American Fascists. They have all the attributes: anti-democratic, anti-Jew, anti-Communist, anti-British Empire. They believe Britain has got too much of the world, which could do with a re-share out, under a different governmental system. Under America First camouflage, they hope to gain Canada specifically and in more general manner a hegemony over the Western Hemisphere. They see their way, not through Democracy, but through Fascism. This brings their outlook in line with Hitler's, not ours. They will do anything to wreck Roosevelt and all he stands for.

The Churches in America—all of them—have been heavy backers of "America First" sentiment. Their subscription figures proved this prior to the inclusion of Russia in the war, and they can hardly have abated since. Anything Soviet is as a red rag to, and has a blinding effect on, religious institutions which by their nature are reactionary, and we have very nearly the only exceptions in the Hewlett Johnsons. One can well believe that Mr. Roosevelt wished for some Vatican directive that would reveal No. 1 Enemy of religion not as Stalin but as Hitler, in order that particularly the powerful American Catholic influence might be won to support of an anti-Hitler policy. But there was nothing doing, and it is just possible that the hold Mussolini still has over the Vatican, whose funds are overwhelmingly in Italian State securities, had something to do with it.

The Pacifist organisations affect fancy titles designed to hoodwink a susceptible public, such as "Gold Star Mothers." This "mother" business is very trying. If sincere, it would be milk-soppy in nauseating degree. It is largely fake. You can still get away with murder in America if you wrap it up with something about "mother." "Why should we American mothers produce sons to go to war every twenty years to preserve the British Empire?" Bunk? It gets there. Pacifist mothers and others are freely pathological publicity cases.

The latest about Big Business suggests that it is not so Anti-Administration as it was some time ago. Who knows but that it has weighed its future under Democracy and under Nazi-controlled American Fascism, and found the second not so appetising? At the moment, Mr. Roosevelt is experiencing more opposition from Labour, thanks to John L. Lewis refusing his support, and a period of strikes and go-slow may lie ahead. French Labour leaders like Belin have sided with Vichy.

Isolationism has varied props. Coughlin, the radio priest, continues to be the "rabble-rouser" of the ignorant, the prejudiced, and the hard-hit. Coughlin has it all set. Stalin is the devil incarnate, but of Hitler and religion—no mention. By raising the anti-Semitic cry, Lindbergh brought down a ton of bricks on himself, but the noise was not completely representative of American opinion on this subject. As mentioned, the Jews have exceptional access to publicity. Then there is the honest "drawn-war" school in which respect I have heard mentioned part of the U.S. ex-servicemen whose main attraction in Europe was the French one, and many of whom swore "never again!" after the sequel to the last war, notably over debts.

It is all grist to the Isolationist mill.

Mr. Roosevelt still has his work cut out.

Some, we know, do not believe America in the war would be a gain; that, indeed, it might prove a loss through the withholding of war supplies. I cannot but think that American production will never soar towards victory-winning proportions until the United States are wholly and solemnly in the war; while I am a convinced believer in the effect on the Germans, people and armed forces, of a return of the New World to battle beside those who beat Germany a generation ago.

Meanwhile, we should never cease thanking Mr. Roosevelt—for supposing a Coolidge were there?

WHAT WILL HAPPEN WHEN THE FREEZE-UP COMES? THE VESSELS OF THE RUSSIAN FLEET WHICH STILL REMAIN IN THE BALTIC will soon be ice-bound, as the Gulf of Finland (at the eastern end of the Baltic) usually freezes over from November till May or June—*Drawing by William MacDowell*

THREE FRONTS IN RUSSIA

Leningrad, Moscow and the Crimea, where Three Separate Soviet Armies are Fighting Manfully Against Terrific German Pressure

Special "Sphere" Drawings and Diagrams

In the Gulf of Finland, at the eastward end of the Baltic, ice begins to form as a general rule at the end of October or beginning of November, and it remains until May or early June. Whilst the ice is forming, ice-breakers can keep the port of Leningrad free; but for about four months—on the average from the middle of January until the beginning of May—it is inaccessible. During this period, of course, all warships in the Gulf are completely out of action, save as anti-aircraft batteries. A number of vessels of the Russian Baltic Fleet are known to have left this region by means of the canal leading from Leningrad to the White Sea: but it is not unlikely that some of the larger warships are still in the Baltic and will, consequently, be held fast as soon as the freeze-up comes. Before the ice finally holds the ships, these will probably be separated, to reduce the chance of loss by air bombing, and moved to strategic positions to serve as anti-aircraft batteries in the defence of the northern capital. In Mr. MacDowell's drawing above the two vessels in the foreground are destroyers, with a cruiser in the background. It must be borne in mind that if the Russian Fleet in the Gulf of Finland is immobilised owing to the ice, in like manner so is the German Fleet!

TRENCH WARFARE IN THE PLAINS: A temporary defensive position built by the Russians during the summer months and later occupied by the enemy

THE SITUATION IN FRONT OF LENINGRAD, where the struggle during recent weeks has developed into trench warfare of the 1914-18 model. Here is a typical Russian gun emplacement dug into a hillside in front of the northern capital—*Drawing by E. G. Lambert*

Hitler has let it be known recently that his wonderful warriors, who have marched all the way to within a few miles of Leningrad, could at any time finish the journey by actually marching into the city. In point of fact, however, they have been held up for weeks by a series of earthworks and entrenchments and gun positions similar to those on the Western Front in France and Belgium in 1914-18. The defensive positions before Leningrad have proved particularly effective; hundreds of thousands of citizens participated in their erection. Sited on hill-slopes and other strategic points, the artillery batteries have broken up attack after attack—to such effect that in some sectors the Russians have been able to launch counter-attacks. Here is a typical Russian gun-pit, well constructed and dry, with shell-racks built of timber and with the guns well camouflaged from above

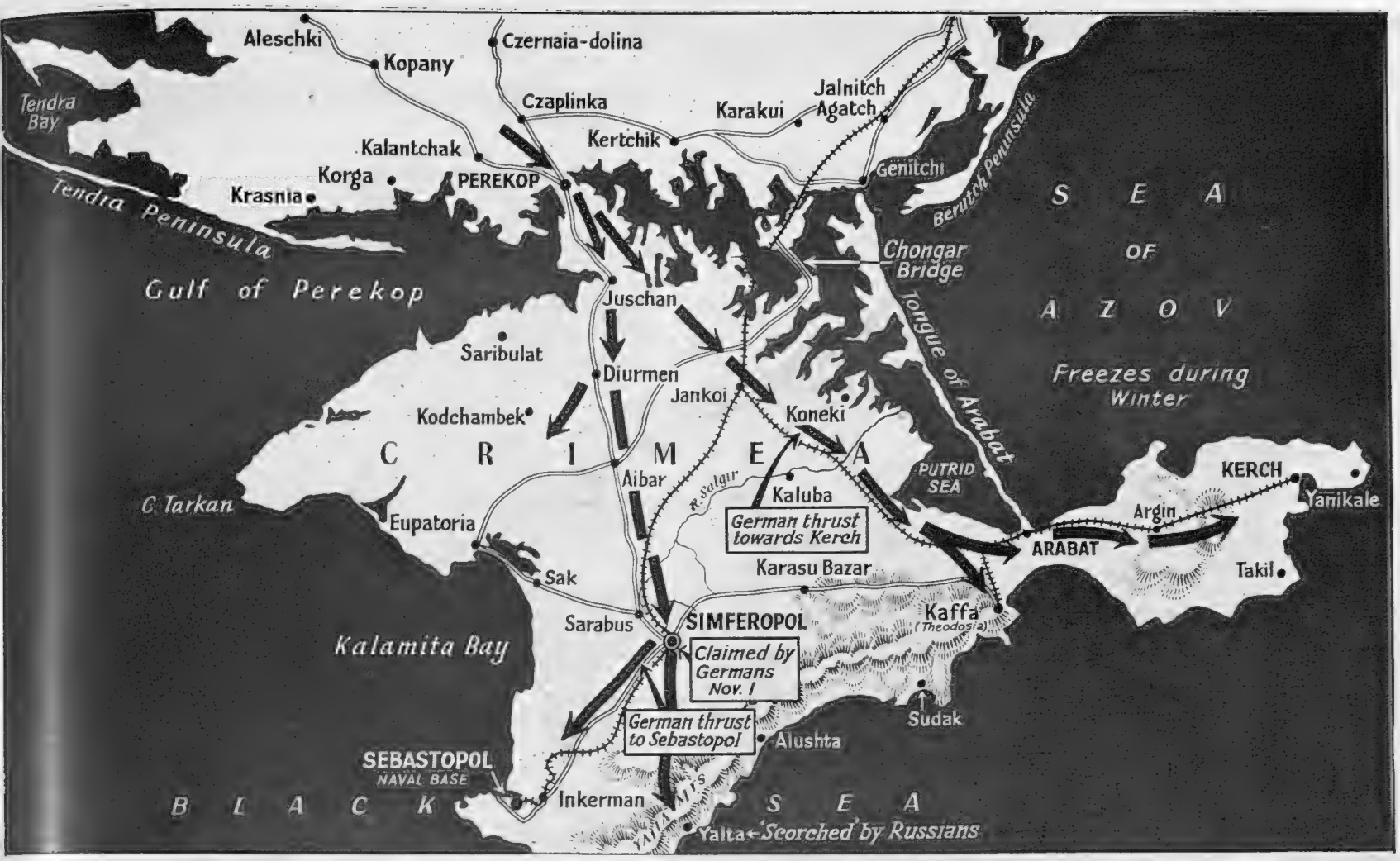
THREE FRONTS IN RUSSIA *(Continued)*

CIVILIANS OF MOSCOW DIGGING NEW DEFENCES IN FRONT OF THE CITY where the fighting, as at Leningrad, is now partaking of the nature of trench warfare: The approaches to the capital—in some places marshland, as shown in the above drawing—have been described by the Germans themselves as "particularly difficult and the whole terrain in front of the fortress of Moscow is one vast minefield."—*Drawing by W. G. Whitaker*

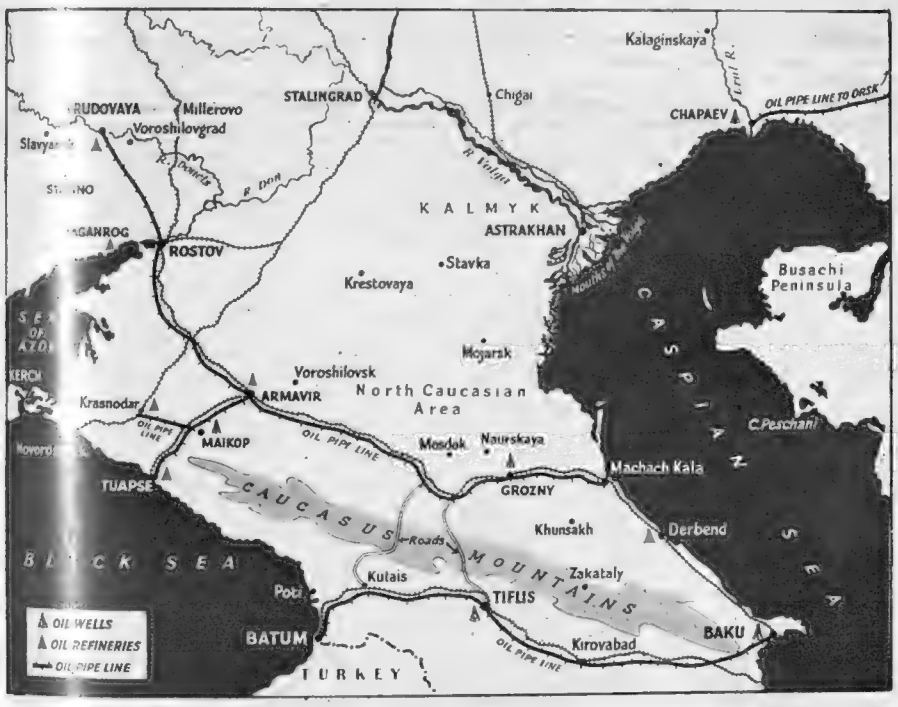
In front of Moscow a similar state of affairs to that in front of Leningrad now exists in certain sectors: in others the mud and slime have made tank advances practically impossible. Rain and sleety snow have been pouring down, rendering every form of road transport slow and liable to disruption: on occasions oil and ammunition have had to be dropped to the Germans from aeroplanes; and it is noticeable that, recently, German propaganda has constantly bemoaned the weather difficulties. One report from Berlin has complained that "the last few miles to the Kremlin are particularly difficult, and it is no exaggeration to say that the whole terrain in front of the fortress of Moscow is one vast minefield. The main ally of the Soviet is the bad weather, and the terrain is almost impassable." The Germans, it is further stated, were forced to keep to the roads because rain and snow made it impossible for the equipment to travel across country

MEN AND WOMEN DIG DEFENCES: Russian civilians mobilise for the building of anti-tank trenches—a picture sent by radio direct from Moscow

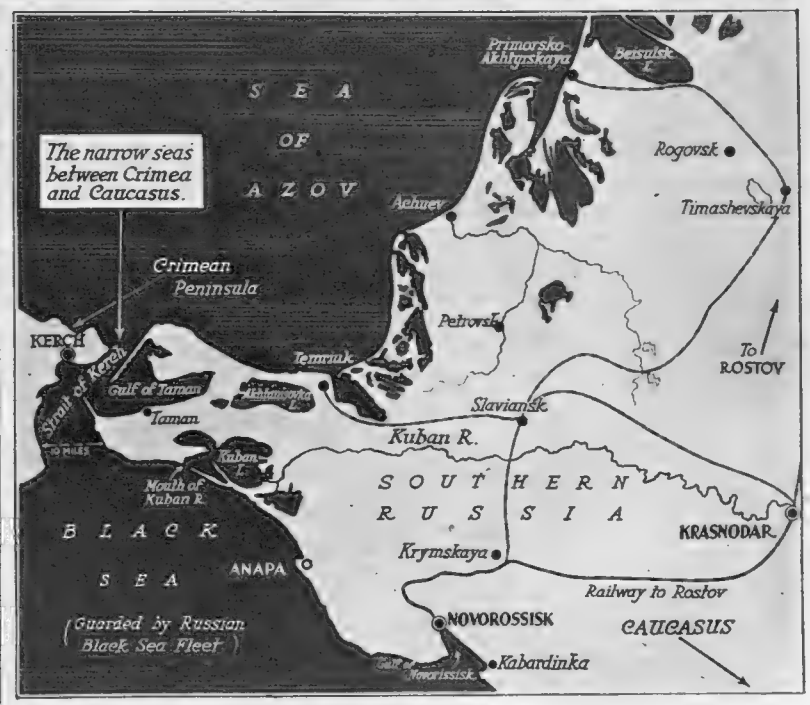
ANKLE-DEEP IN MUD AT AN R.A.F. LANDING-GROUND IN RUSSIA: Heavy rain in Northern Russia has been hampering the activities of the R.A.F. wing, their improvised aerodrome being frequently waterlogged and ankle-deep in mud. In this picture Wing-Commander Ramsbotham-Isherwood (on left) and the Medical Officer are seen trying to cope with typical Russian conditions! It is only reasonable to assume that the Germans, too, are being hampered by similar conditions in their widespread operations in Russia



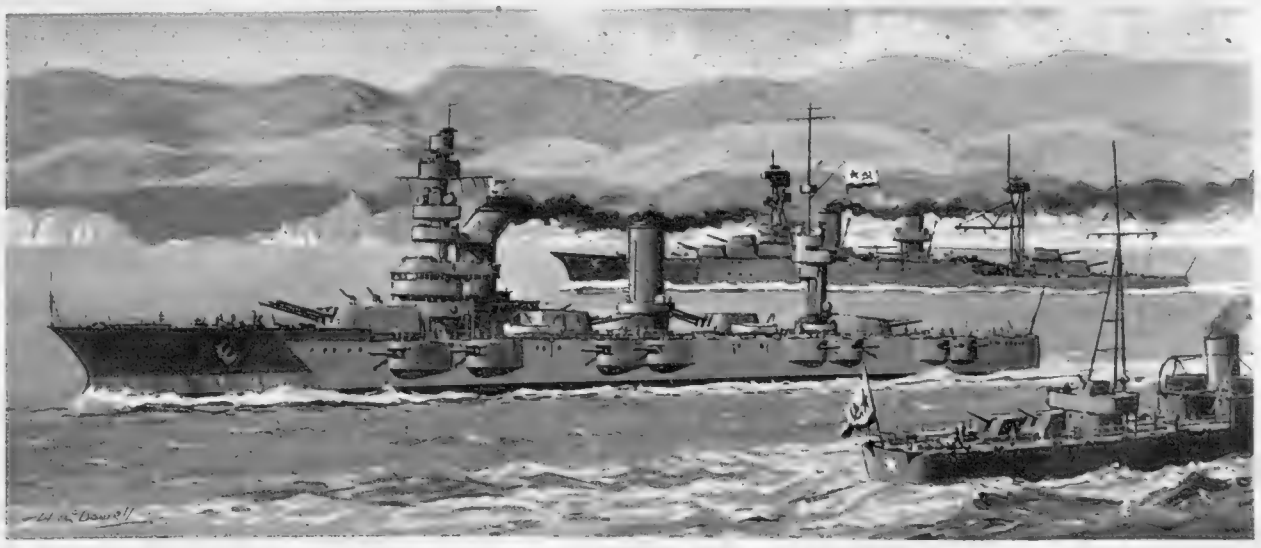
THE CRIMEAN PENINSULA and the manner in which the German advances have been made : The Peninsula itself has little of military importance for the Germans. It is true that Sebastopol is a naval base for the Black Sea Fleet, but the Russians have other bases on the Caucasian coast which they can well use. The importance of the Crimea to the Germans undoubtedly lies in the fact that it may prove a "short cut" to the Caucasus and its rich oil and mineral stores. To achieve this, the Russian Black Sea Fleet must, of course, be destroyed, so that the crossing of the Strait of Kerch may be unimpeded; but at the moment the naval command of the Black Sea is held by the Russians. The two maps *below* further illustrate the strategic position in this area. It should be noted that, in the winter, the comparatively shallow Sea of Azov is frozen over



THE ADVANCE OF THE GERMANS TOWARDS ROSTOV-ON-DON has drawn attention to the existence of a second Caucasus pipe-line : This is in addition to the more famous Baku-Batum line, about which so much has already been written. It connects up the rich areas of Grozny, Armavir, Maikop, Krasnodar and Trudovaya, with Rostov as its central point



THE NARROW SEAS BETWEEN THE CRIMEA AND THE CAUCASUS : The approach to the Caucasus by way of the Strait of Kerch is obviously a "short cut" which appeals to the German military commanders. Here the stretch of water separating the Crimea from Southern Russia is only a very few miles across. Nevertheless, the terrain is not regarded as ideal, as the eastern shores of the Black Sea are broken by lakes and marshland before rising up to the more mountainous Caucasus region. It has also been pointed out by experts that without naval command of the Black Sea the crossing of the Kerch Strait may well prove a hazardous undertaking. Once across, however, the rich oil region lies almost within grasp of the Germans



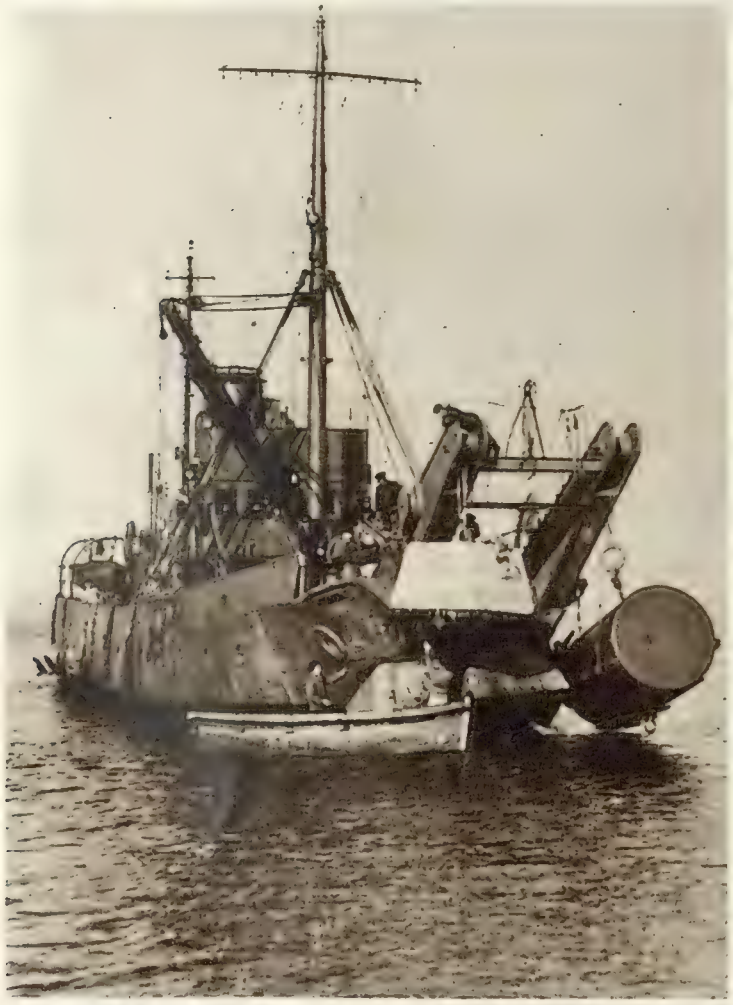
On right—**A PORTION OF THE RUSSIAN BLACK SEA FLEET formerly based on Sebastopol**—*Drawing by William MacDowell*

Qualified opinion is that the Black Sea Fleet of our Soviet ally is more than a match for anything that Germany can dispose of now or in the near future, always provided that she does not obtain air supremacy in the Black Sea, which is considered unlikely. In this picture are seen the following units of the Russian Black Sea Fleet: the battle-ship *Marat* of 23,000 tons; the battle-cruiser *Krasni Kavkaz* of 8,000 tons; and the destroyer *Petrovski*, which was completed in 1925

The ROYAL NAVY at WORK

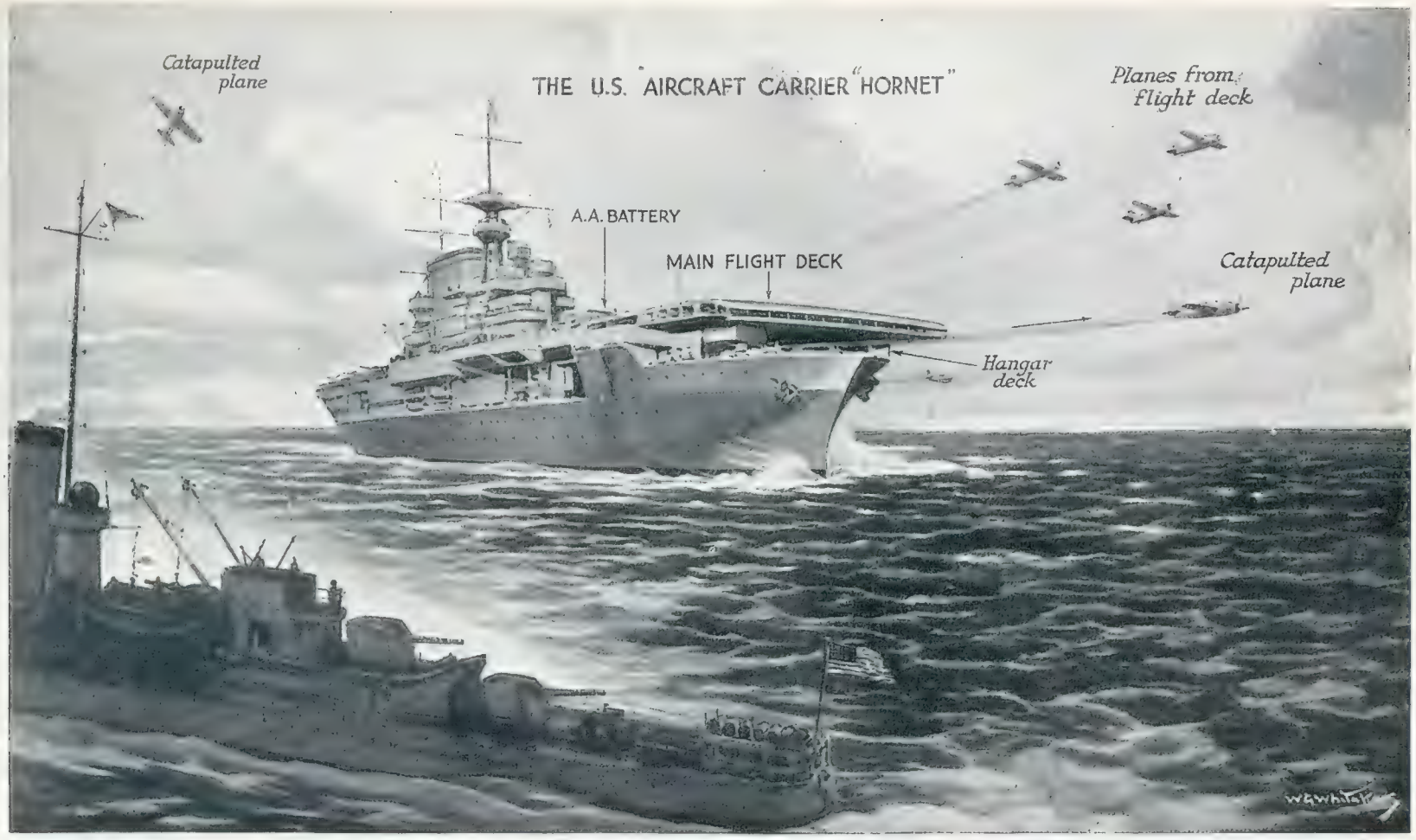
"ANNIE'S TUGBOAT," IN SERVICE ONCE AGAIN, has saved thousands of tons of British shipping: This is the vessel on which Wallace Beery and Marie Dressler made their films, and which is now being operated by the Admiralty. (See notes on right)

The First Lord of the Admiralty inspects BRITAIN'S CRACK MINESWEEPER at Grimsby during his tour of East Coast ports: Mr. A. V. Alexander, First Lord, has just carried out a tour of East Coast ports. During the course of this he went on board Britain's champion minesweeper, the *D. W. Fitzgerald*. The latter has red chevrons and stars painted on her bridge to denote her battle honours: so far there are eighty-five, each of which indicates that an enemy mine has been dealt with—and there are five more to go on! In this picture taken as Mr. Alexander stepped aboard, some of the chevrons can be seen on the bridge. The First Lord also took the opportunity during his tour of boarding the famous old tugboat *Sabine*, and congratulating her crew on their fine work. This rescue-tug must be known to thousands of people throughout the world as the tug in which Wallace Beery and Marie Dressler made their films about "Tugboat Annie." The *Sabine* (seen in the picture on the left) has saved hundreds of thousands of tons of shipping in this war. In the film the tug sank; since then she has been raised, crossed the Atlantic under her own steam, and has been refitted by the Admiralty. Now, manned by bluejackets, she has towed into harbour many disabled vessels—on one occasion, part of a tanker which had been broken in two by a torpedo. The picture we give here was taken at Immingham



ONE OF THE BOOM-DEFENCE VESSELS which guard the harbours of Britain: Men who are used to handling fishing gear in peacetime are particularly suited to boom-defence work in wartime. These ratings of the Royal Navy man the ships which lay the moorings and cables for the pontoon defences which guard our ports and harbours—a task which is seen in progress in the above picture

CONTRABAND CONTROL AT SEA BY THE ROYAL NAVY: The picture we reproduce here shows a British boarding-party leaving a neutral merchant vessel after inspection—in this case a Portuguese ship from Lisbon. In all parts of the ocean and the Seven Seas, the Royal Navy is exercising contraband control, to ensure that no supplies from overseas reach the enemy's shores. A cruiser on patrol duty in the Atlantic has sighted the merchant ship. The warship closes the stranger, and signals her to "Heave to." A boarding-party in charge of an officer is detailed, and they pull over in a whaler to inspect the merchant vessel. Usually the ship's papers, on examination, are found to be in order, and that the ship has been issued with a navicert. Occasionally an enemy supply ship is encountered on the high seas, but when this happens it can be taken for granted that the supplies she carries will never be landed on enemy territory!



THE AIRCRAFT-CARRIER "HORNET," OF THE U.S. NAVY, not only flies aircraft off her main flight deck but also catapults other aircraft from her hangar deck just below—a new undertaking for vessels of this type!—*Drawing by W. G. Whitaker*

Hornet is one of three new aircraft-carriers—*Enterprise* and *Yorktown* are the two other vessels of her class—for the U.S. Navy. She was laid down in September 1939, for completion in 1942; but she has already been commissioned, so rapid has been naval construction since the outbreak of war. The other two vessels were completed according to schedule in July 1938, having been laid down in 1934. One of the most striking features of the new carrier is the manner in which aircraft are catapulted off the hangar deck immediately below the main flight deck. This is a definite innovation for this type of vessel! There are other notable points in connection with the *Hornet* which are brought out in the drawing above. The bow, for instance, is shaped with a knife-like entry, but an exceptionally big flare (outward curve of the plating) in order to check the tendency of a fine-lined ship to dive when she is being driven against a head sea. This, of course, is invaluable in keeping the flight deck steady for returning planes. She has an exceptionally wide flight deck; and, on a special platform, nearly as high as the flight deck, she has two 5-in. dual-purpose guns for anti-torpedo or anti-aircraft work, placed in this position so that they can fire right across the deck without interfering with planes taking off or flying on. The main structure on the starboard side is streamlined and has been pushed right over to be out of the way. *Hornet* has a displacement of 19,900 tons and carries a complement (including flying personnel) of 2,072. Her armament includes a total of eight 5-in. dual-purpose guns; and she carries 81 aircraft aboard, but has space for 100

THE CAPTAIN OF THE AIRCRAFT-CARRIER "HORNET": Captain M. A. Mischer (on right) is here being greeted by the U.S. Secretary of the Navy, Colonel Frank Knox. This picture was taken at the Norfolk (Virginia) operating base last month, during "Commissioning Exercises," when Captain Mischer took command of the new 31,000,000-dollar vessel. The ceremonies were held on the flight deck of the *Hornet*

THE AIRCRAFT-CARRIERS OF THE U.S.A.: *With Particular Reference to the Newly-Commissioned* Hornet. By FRANK C. BOWEN

THE aircraft-carriers form a particularly important branch of the U.S. Navy and, moreover, it is a branch which has unlimited possibilities if the Japanese Government choose to extend the war into the Pacific. The Japanese public has been regaled with any number of propaganda stories concerning the colossal damage done by German aircraft in Warsaw, Leningrad and London, and by their own 'planes in China, but now that things look like coming to a head in the Pacific they are wondering what the U.S. aircraft-carrying fleet, with its numerous 'planes, may not do to their towns whose houses are still built principally of wood and paper. This feeling has been lulled for some years, but it was very strong after the Washington Disarmament Conference. That conference allowed both Japan and the United States to convert two uncompleted capital ships into aircraft-carriers. The Japanese converted the *Kaga* and *Akagi*, and the Americans converted the *Lexington* and *Saratoga*. Both types were armed with 8-in. guns, the biggest calibre allowed by the Washington Treaty and far bigger than the British Navy put into the type. Each country immediately became apprehensive that the other was building these carriers for the purpose of raiding across the Pacific.

The *Lexington* and *Saratoga* from first to last cost nearly £10,000,000 apiece, and this deterred even the Americans. Their standard displacement was 33,000 tons, their speed about 33 knots and they carried 90 'planes apiece. They have proved remarkably effective, although very costly to maintain, and when Congress voted the money to reinforce them it wanted something very much cheaper.

The next ship launched, in 1933, was the *Ranger*, of only 14,500 tons, with a speed of 29 knots and an armament of eight 5-in. guns instead of eight 8-in. She was very much cheaper and could carry 80 'planes, but she was not nearly as effective as the bigger *Saratoga*, especially when it came to flying the 'planes back on to her deck.

So the *Enterprise* and *Yorktown* were built with a displacement of practically 20,000 tons, a speed of 34 knots and an armament of eight 5-in. guns, with stowage of 100 'planes and good armour. There was considerable difficulty with the construction of these ships and they were four years building, but the design was greatly improved in the *Hornet* which has just been completed nearly a year ahead of schedule time. With the same displacement, armament and speed, all the faults of the previous ships have been eradicated, and she has cost something like £6,000,000.

In general outline she follows the same principles as H.M.S. *Ark Royal* and other modern carriers, but she has many innovations. Her three funnels are trunked into a single casing which, with the navigating bridge and all other fittings, is placed right over on the starboard side of the ship. It is carefully streamlined, although this is not so much for the purpose of speed as to avoid eddies of wind going across the flight deck and embarrassing the aircraft. To leave the deck as clear as possible a sponson is built out for over 150 ft. on the starboard side of the ship, giving her a somewhat lop-sided appearance, but being very effective. The flight deck is narrowed at the bow and stern, not sufficiently to impede flying, but just enough to give the eight 5-in. guns good anti-aircraft fire. They are raised on special superstructures just below the flight deck, giving them an excellent field of fire against both aircraft and torpedo craft.

Perhaps the most interesting feature about the new ship which has been released by the U.S. Navy Department—there are any number which have not—is indicated by the unusual height between the hull proper and the flight deck. Most aircraft-carriers fly all their 'planes off the flight deck, leaving the catapult to the aircraft-carrying ships like cruisers and battleships; but in addition to a very fine flight deck, the *Hornet* has catapults on her main or hangar deck. While some of her hundred 'planes are being taken on to the flight deck by the lifts, others can be wheeled out of the hangars straight on to the catapults and shot into the air at the same time. The number of 'planes which can start off together is, needless to say, a very big advantage in making an attack. Including her flying personnel and mechanics, the *Hornet* will carry a crew of over 2,000 men, nearly as many as the *Saratoga* which has 50 per cent. more displacement.

Fine ship as she is, the design of the *Hornet* has already been improved, and in the numerous aircraft-carriers which are now being built for the Two-Ocean Navy, the displacement has been increased to about 26,000 tons, which is about 3,000 more than the *Illustrious* and *Formidable*, and the cost of each ship will be over £10,000,000.

REAR-ADMIRAL ARTHUR BYRON COOK, who commands U.S. naval aircraft (shore-based planes, as well as a group of aircraft-carriers). The Admiral turned to naval aeronautics after twenty years of service with surface vessels. His chief is Admiral King, Commander-in-Chief of the U.S. Atlantic Fleet

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THE DESTROYER OF TO-DAY: A 1939 DESTROYER OF THE JAVELIN CLASS, showing the modern characteristics of British vessels of this type which have so greatly distinguished themselves during recent operations—*Drawing by William MacDowell*

In the modern destroyer the change in the funnels, the introduction and growth of the after superstructure, as well as an increase in the size of the forward superstructure, have all been most marked. "Out of all recognition" is the phrase used by the writer of the article below to describe the development of the British destroyer since the first *Havocks* were built. To the layman's eye, the alteration of silhouette alone is very marked. Following the four funnels of the earliest types came the two-funnelled destroyers, and now the Javelin and following classes present but one single sturdy smoke-stack. In this "J" class, as illustrated above, the outline builds up through the forward gun houses and the forward superstructure to the apex of the control tower which, from certain angles, looks like the top of a second funnel: there is only one, however. The two-funnelled destroyers preceding the Javelin class adopted all sorts of combinations of stout and slender funnels, all of which had a good reason. Ofttimes it was not a graceful or impressive arrangement. With the adoption of the single funnel, the size and shape of the superstructures grew more impressive as further developments took place, until the silhouette of the modern destroyer is as that given above. The Javelin destroyers are, for the most part, of 1,690 tons and carry a complement of 183: they have a length of 348 ft., and a breadth of 35 ft. Their turbines develop 40,000 h.p., which gives them a speed of 36 knots. These vessels are all armed with six 4·7-in. guns in three twin mountings, and six others, including multiple pom-poms; ten 21-in. torpedo-tubes are also fitted. The drawing by Mr. MacDowell above shows one of this class at top speed, engaging an enemy vessel with the forward guns and beating off aircraft with the after guns and the "Chicago Piano" (or multiple pom-poms) just aft of the funnel. A torpedo is being launched to port, and the vessel is laying a smoke-screen from her funnel. Note the high "citadel"-like bridge and the range-finder; also the blast screens to protect the lower guns from the blast of the upper ones. The graceful out-reaching stern is somewhat of an innovation in the Navy, and is so far confined to the Javelin and Tribal classes of destroyer

THE DESTROYER OF TO-DAY

Its Development Into the Efficient Ship of War which is the Terror of the Mediterranean, and Other, Seas

DURING the present war, as in the last, the destroyers have proved themselves invaluable ships for a hundred duties; they have been worked tremendously hard, but have proved wonderful vessels for standing up to a great strain. The type is actually under fifty years old, the first destroyers being built long after the first submarines, but it has developed out of all recognition since the British Navy built the first destroyer, H.M.S. *Havock*, in 1893.

At that time all the navies in the world, but particularly the British, were apprehensive of the power of the torpedo-boat. An effort had been made to counter this danger in the 80's by building "torpedo catchers," gunboats armed with quick-firing guns and given an unusually high speed. This speed was insufficient to catch a torpedo-boat in anything less than half a gale of wind, and it was suggested that the only ship really suitable for the work was an enlarged torpedo-boat, big enough to have a higher speed than her quarry and to maintain it in a sea which would immediately slow down the smaller vessel. Both the French and the Russians had torpedo-boats with a displacement of about 120 tons and a speed of 25 knots; Messrs. Yarrow designed the *Havock* and contracted to build her for £36,500—roughly one-tenth the price which is being paid to-day. She had a displacement of 220 tons, a speed of 27 knots and a quick-firing armament of one 12-pounder and three 6-pounders for the destruction of torpedo-boats. In case the opportunity arose where she could act as a torpedo-boat herself she carried three torpedo-tubes.

On left—**THE DECK OF A DESTROYER, looking towards the stern of the vessel:** This is an excellent picture for detail, and shows the deck of an ordinary Fleet destroyer. Here is the key: **A**—whaler ready for immediate use: in this type of davit, working on a hinge at its heel, it is possible to get the boat overboard in a matter of seconds, while it normally lies sufficiently inboard, to be safe from being smashed up by the sea; **B**—a pair of mine rails on which the mines are stowed on board, being pushed over the chute on the quarter of the ship as shown. Note that these are temporary, not built with the ship as in some cases; **C**—depth-charge thrower, of ordinary type; **D, D**—Carley floats stowed so that they will float off if the ship goes down; **E**—the bandstand of the anti-aircraft gun which is actually hidden abaft the funnel; **F**—the identity band: its colour varies according to the flotilla, and its position and number according to the ship; **G**—searchlight platform; **H**—after superstructure, giving a mounting to the super-firing after gun and at the same time protecting the entrance to the officers' accommodation, which was inaccessible in the older types when their decks were awash; **I**—torpedo-tubes almost hidden by the searchlight platform; **J**—hatch over the boiler-room ventilation entry—very important, as these destroyers naturally do practically all their steaming under forced draught

So successful was the *Havock*, and five other pioneers built by different yards to their own designs, that a large number of 27-knot destroyers of rather larger size, many of them averaging well over 28 knots on trial, were built. For their function of torpedoing battleships, the early destroyers had to be designed to present as small a target as possible. Added seaworthiness was given by a sloping "turtle-back deck" forward, but its virtue was very limited and all the 27- and 30-knotters were expected to take shelter in bad weather. Built on speculation, the pioneer turbine destroyer *Viper* managed 35 knots on trial, a world's record, but trying to emulate her the *Cobra* was built far too lightly and broke in two in quite a moderate gale in the North Sea, drowning a large number of her crew.

The *Cobra* disaster caused a sensation and the Admiralty completely changed its policy. The new destroyers, all named after rivers, were built with a speed of 25½ knots only, but instead of the turtle-back deck they had a fine high forecastle and they could keep up a steady 25 knots through weather which brought the 30-knotters down to 20 and 21.

The advent of the turbine, and boilers burning oil instead of coal, started a new era in 1906. The first Tribal class had a displacement varying from 870 to over 1,000 tons, for the builders were still designing their ships according to their own ideas, and a speed of 33 knots which several of them exceeded two and three knots on trial. Alongside them was built the experimental 2,170-ton, 36-knot *Swift*, armed with four 4-in. guns, but her cost of £250,000 was considered terrible and the design was not repeated. Modern destroyers of under 1,400 tons cost about £325,000 apiece before the war.

After the Tribals and the *Swift* there was a reaction and cheaper ships were built with a speed of 27 knots only, although they were magnificent seaboats with high forecastles. It was soon decided, however, that this speed was too low, and at the outbreak of the late war destroyers were being built with speeds of 29, 32 and 34 knots, armed with three or four 4-in. guns and four 21-in. torpedo-tubes, their displacement varying from under 950 tons to about 1,200.

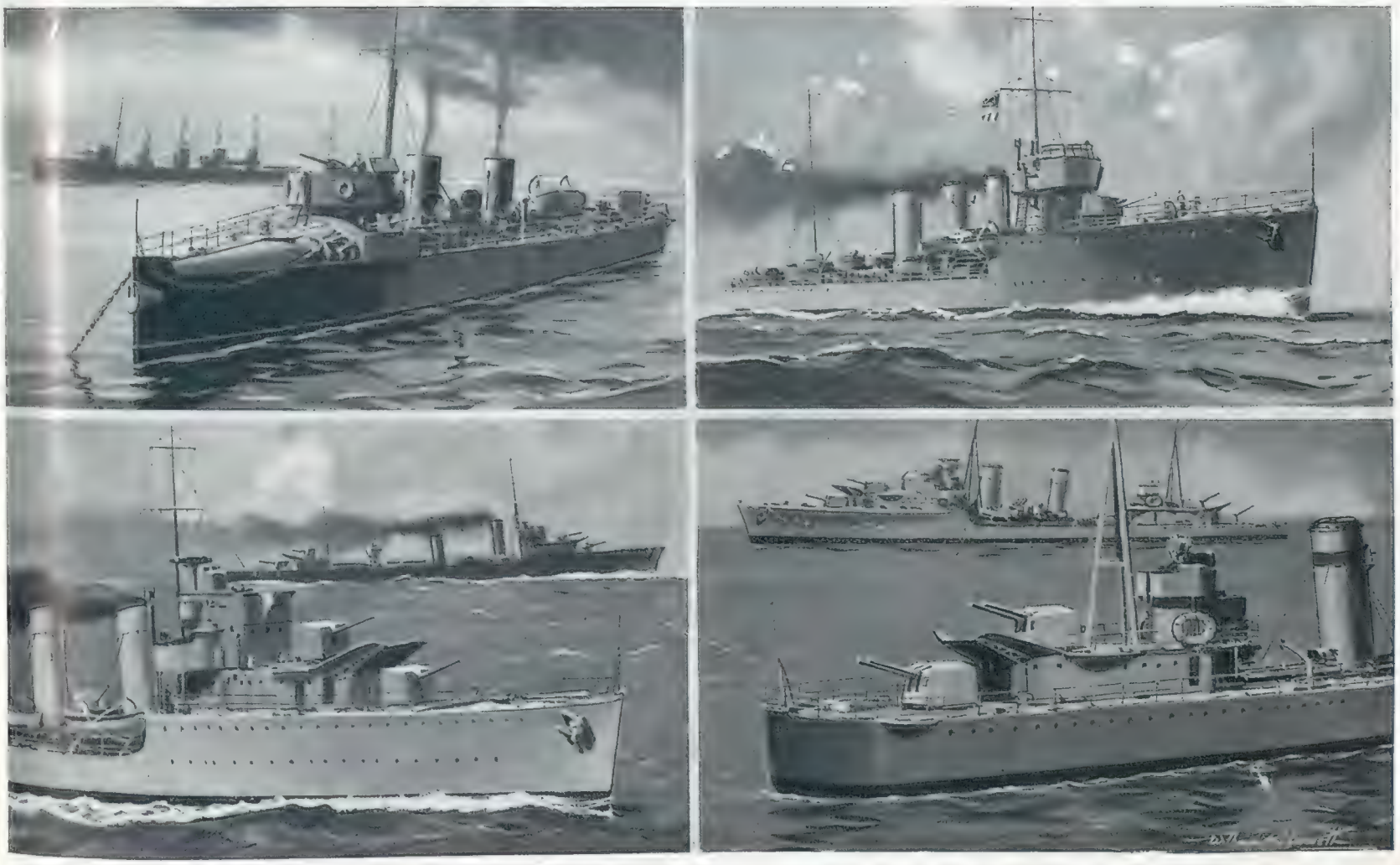
During the late war the Navy built a very large number of destroyers to various standardised Admiralty designs, which Messrs. Thornycroft and Messrs. Yarrow were allowed to vary on account of their great success in designing destroyers for foreign navies. It was found possible to reduce the number of funnels from three to two, a great convenience in keeping the deck clear; the main armament was increased from 4-in. to 4·7-in. guns, which were made far more effective by letting the inner ones fire over the outer ones, and the torpedo-tubes were increased from four to six. Anti-aircraft guns were fitted and the displacement was increased to over 1,300 tons, with accommodation good enough to keep the crews in health. The speed varied from 34 to 36 knots, To lead the flotillas, and to provide accommodation for the flotilla staff, a few specially large ships were built.

After the war the general principles of design were more or less standardised and only minor alterations were made between the "A" class of the 1927 programme, 1,350 tons, 35 knots, armed with four 4·7-in. and six smaller guns and eight torpedo-tubes, and the "I" class of the 1935 programme, 1,370 tons, 36 knots, four 4·7's, six small guns and ten torpedo-tubes.

By then it was decided that the probable duties of the destroyer were so numerous, demanding different weapons, that it was unwise to pack them all into a single ship, and in the 1935 and 1936 estimates the new Tribal class was built primarily as a gunnery ship. On a displacement of 1,870 tons, 36½ knots, they mount eight 4·7-in. guns and seven smaller, with only four 21-in. torpedo-tubes, while the "J" class of destroyer, 1,690 tons, 36 knots, have six 4·7's, six smaller and ten torpedo-tubes. The wonderfully compact boilers of the latter only demand a single funnel, so that their decks are much clearer.

F. C. B.

Below—The first British "torpedo-boat-destroyers" came into being in 1893, and they were built as a reply to the menace of the "torpedo-boat" to large capital vessels. Since that time they have grown from small ships of about 300 tons and 27 knots speed to what are virtually unarmoured cruisers of (in the case of the Tribal class of 1938-39) 1,870 tons and 36·5 knots. It is interesting to note that, in the forty-seven years of development, the speed has been raised only from 27 to 36·5 knots—an increase of little more than one-third—despite that the horse-power necessary to produce this has been increased more than seven times. In the drawings below—**in the top left**—is seen a typical early destroyer of 1893, the first of its class, of about 300 tons. It had a length of 210 ft. and a breadth of 21 ft.: its horse-power of 6,000 produced a speed of 27 knots. For armament there were one 12-pounder gun and three 6-pounders, with two 18-in. torpedo-tubes. Note the bow tube, which was later discarded in all surface ships because, as the ship's speed increased, there was a danger of the vessel over-running her own torpedo! Note also the "turtle-back" forecastle. In the background is a later type, of about 1908: this class averaged 280 ft. in length by 26½ ft. in breadth and 15,500 h.p. (turbines). The **top right drawing** shows a typical destroyer of the last war—about 900 tons, 276 ft. in length, and 26¾ ft. in breadth; 27,000 h.p. and 36 knots. Armed with three 4-in. guns as well as smaller ones, and four 21-in. torpedo-tubes. In the **bottom left** are typical modern destroyers: in the foreground, one of the Greyhound class, of 1,335 tons, 323 ft. in length, by 33 ft. in breadth, 34,000 h.p. and 36 knots. Guns—four 4·7-in. and six smaller; eight 21-in. tubes. In the background is a "W" class destroyer of 1,100 tons, 312 ft. in length by 29½ ft. in breadth, 27,000 h.p., and speed of 34 knots. Guns—four 4-in., four Lewis, six 21-in. tubes in triple mountings. In the **bottom right drawing** is shown a Tribal class destroyer, amongst the biggest in the British Navy to-day: 1,870 tons, 335½ ft. in length by 36½ ft., 44,000 h.p., 36·5 knots. Guns—eight 4·7-in. and seven smaller, four 21-in. tubes. In the foreground is shown the after end of the class, with its superstructure carrying one of the twin mountings as well as the tripod mast and searchlight platform



THE EVOLUTION OF THE BRITISH DESTROYER, from the first turtle-backed "torpedo-boat-destroyer" of the year 1893 (300 tons and 27 knots), up to the Tribal class of to-day (1,870 tons and 36·5 knots), showing the various transformations which have taken place in the armament and appearance of these vessels during fifty years of development (see notes above)—*Drawings by William MacDowell*

SUPPLIES into RUSSIA BY WAY OF IRAN

How Vital Materials to our Ally will be Sent by the Trans-Iranian Railway

WHILST other ways and means are being discussed of sending aid to our Russian ally, work is proceeding on the scheme whereby the Trans-Iranian Railway can be vastly improved to carry an enormous volume of traffic direct into Soviet territory. Already much valuable material is passing over the railway from Bandar Shahpur, through Teheran, to Bandar Shah: Colonel J. J. Llewellin, a few days ago, made it known that 1,000 goods wagons for our ally have been shipped to the Persian Gulf; and it has also been announced that 142 powerful locomotives, with tenders and spare parts, have also been sent out by this route.

In practically every mile of its length the railway is being strengthened, double-tracked, improved, by a vast number of labourers, so that the heavy traffic can be carried without delay or breakdown. The railway, as it exists to-day, was inaugurated by the ex-Shah in August 1938: from Bandar Shahpur, on the Persian Gulf, to Bandar Shah, on the Caspian Sea, it has a total length of 872 miles. The total cost, after eleven years of work, was approximately £30,000,000.

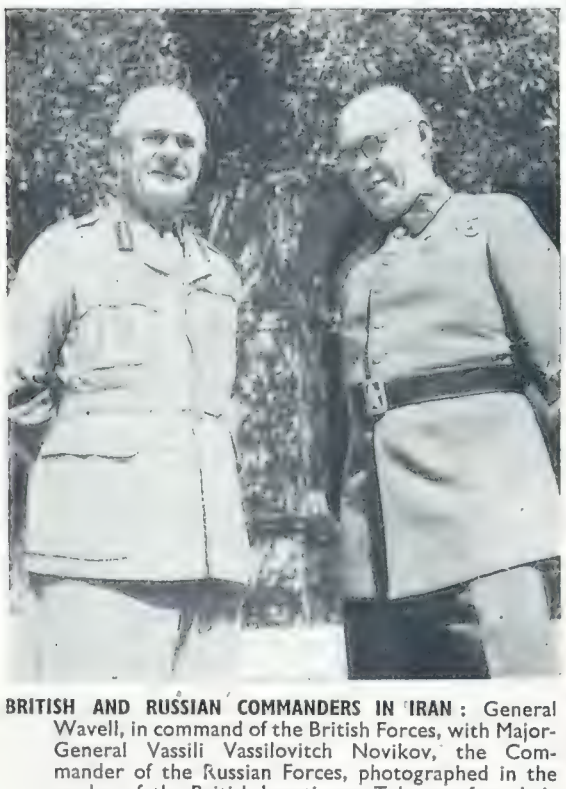
"The most vital duty which the British and Indian Force now in Iran and Iraq has to perform at the moment is to organise the transport of war material," declares a special correspondent of the *Times*. "This is one of the most complex tasks imaginable. That amazing feat of engineering, the Trans-Iranian Railway, provides the most direct route, but it is not without great disadvantages.

"Its terminal, Bandar Shah, on the Caspian Sea, whence goods can be shipped to Baku, has been left high and dry in recent years by the shrinkage of the waters of the Caspian, and there is a 300-mile gap between the other northern terminal, Kasvin, and the Russian railhead at Tabriz. Its southern port, Bandar Shahpur, which should not be confused with Bandar Shah, is nothing but a small jetty built out over a mud-flat, in which only two average-sized steamers can lie simultaneously. The railway can carry what the port can discharge, but only for the first 150 miles. For the next 150 miles the gradients become precipitous, and tunnels succeed one another at the rate of one a mile. At Andimeshk, therefore, just to the north of Dizful, the trains have to be divided. This would not be a disadvantage provided there were sufficient locomotives, but the line has only a scratch collection of engines, of which about one-half are unserviceable owing to bad handling by the Iranian staff, the skilled European cadres having been discharged on grounds of economy. British and Indian personnel will have to be found to help work the line. . . . Plans are complete. Bandar Shahpur is to be enlarged, so that it will ultimately be able to handle 3,000 tons daily, and, in case of congestion, a by-pass will be provided by ferrying the goods by lighter up the River Karun to Ahwaz, 8 miles higher up the line, and putting them on rail there. The bottle-neck on the railway, at Andimeshk, is to be eased by sending some goods from that place by road.

. . . So far, however, these are only plans. Engineers on the spot are still having to make bricks without straw, until the essential material and personnel arrive from India."

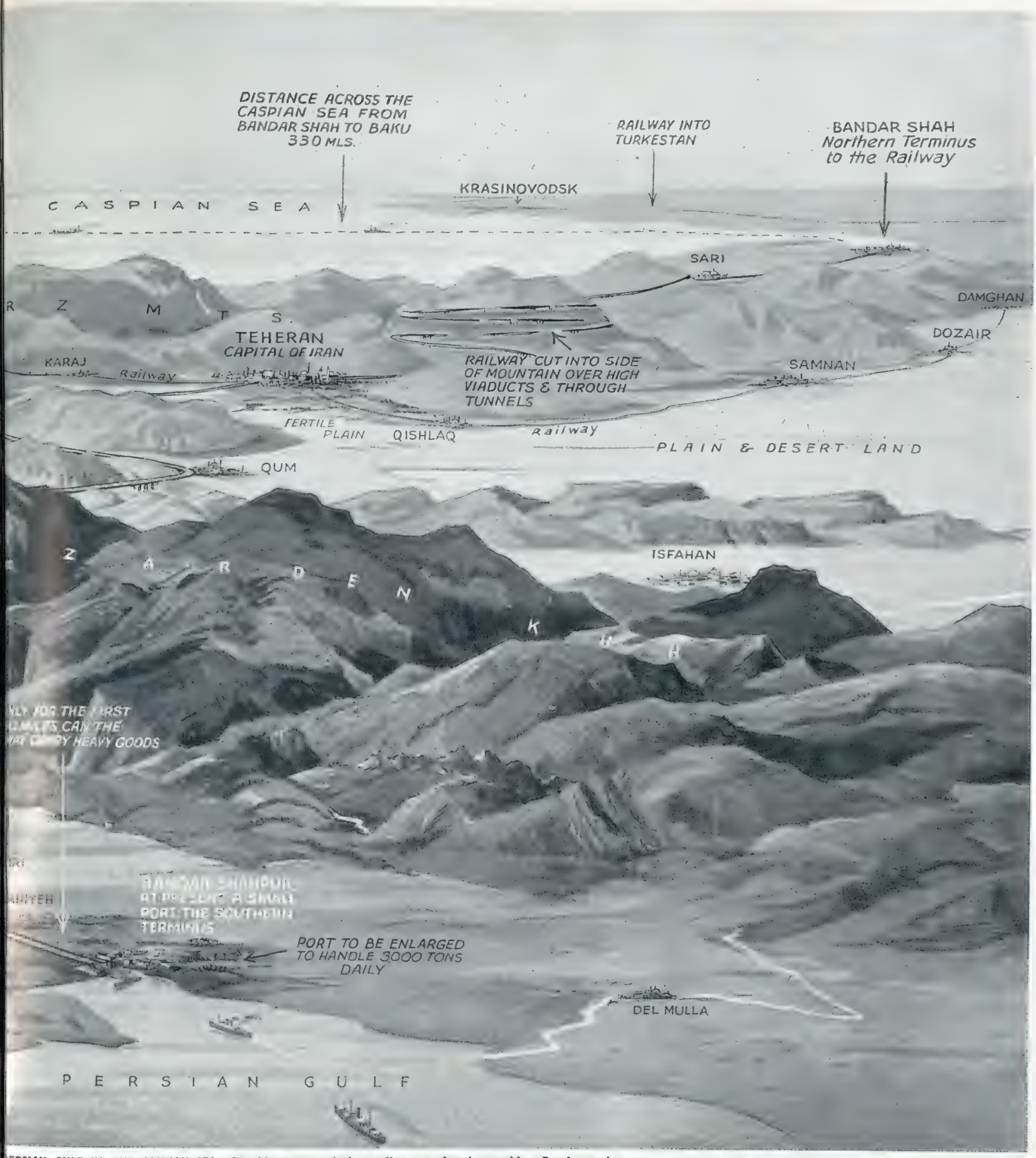
LIFE-LINE TO RUSSIA: THE 872 MILES OF THE IRANIAN RAILWAY WHICH SPAN THE COUNTRY FROM ... plans are now afoot whereby a flood of material ...

Built from north to south, the ... of Teheran: a branch line run... pleted up to Damghan, some ... Teheran; another branch line ... completed up to Zendjan, some ... section there are seven tunne... longest exceeding one and a q... the trains have to be divided ... Bandar Shahpur, at present a ... the railway, is to be enlarged ... this port, for a distance of 15... loads until the "bottle-neck ... Again, beyond Teheran, on ... country is encountered, the ra... mountains, over high viaducts ... at the northern terminus, supp... either through Turkestan or ...



BRITISH AND RUSSIAN COMMANDERS IN IRAN: General Wavell, in command of the British Forces, with Major-General Vassili Vassilovitch Novikov, the Commander of the Russian Forces, photographed in the garden of the British Legation at Teheran after their first conference on Allied war problems

On left — **GENERAL NOVIKOV** watching a review by British and Russian troops at Teheran. The parade took place prior to the evacuation of Teheran by the British and Russian troops at the request of the new Iranian Government



ERSIAN GULF TO THE CASPIAN SEA : By this means, vital supplies are already reaching Russia, and h our Russian allies—*Drawing by E. G. Lambert*

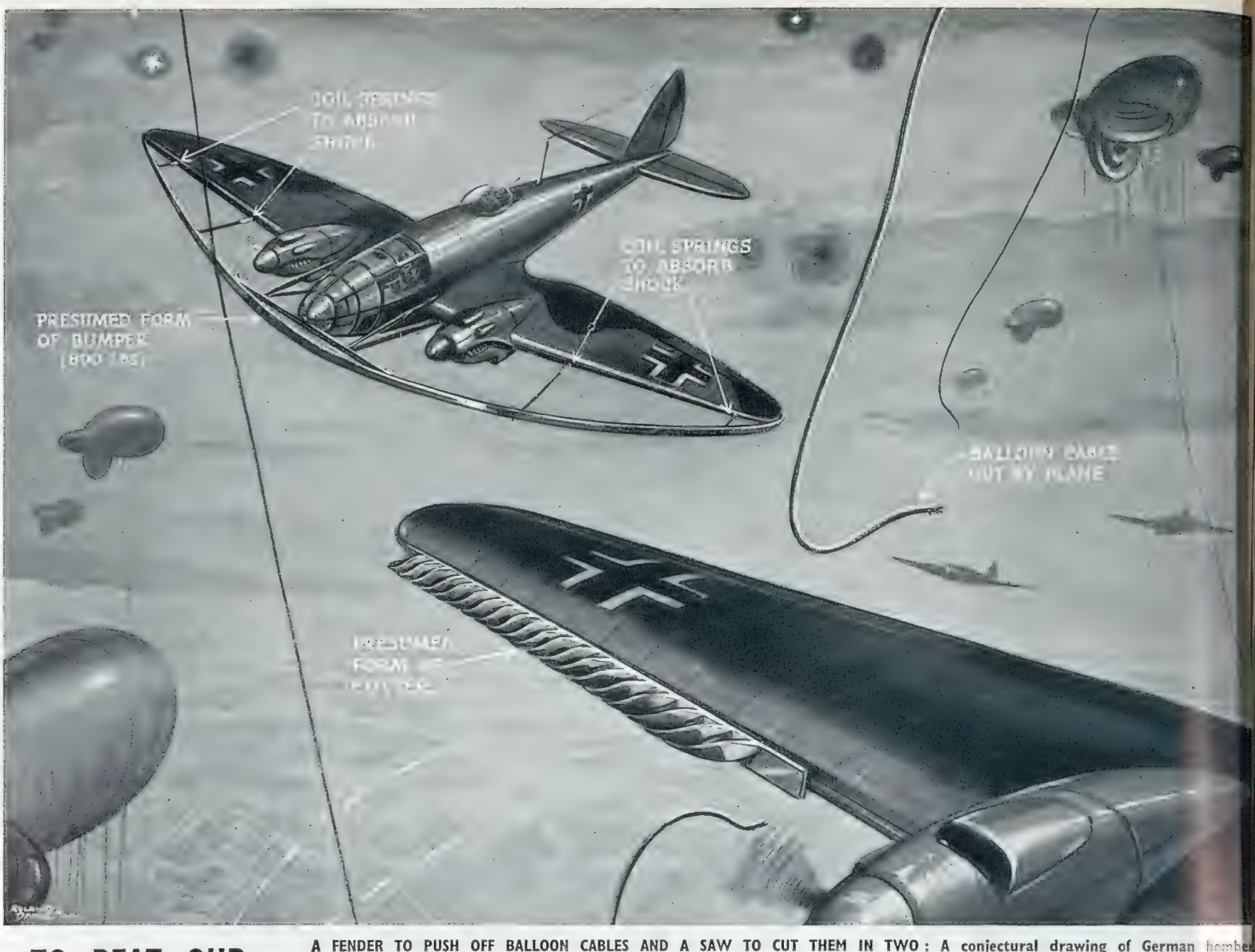
ins through the capital city ards Meshed has been com- metres to the north-east of eheran to Tabriz, has been ilometres. In the southern ugh the Zagros range, the iles : this is the spot where o the very heavy gradients. ort at the southern end of dle 3,000 tons a day : from the railway can carry heavy s reached north of Dizful. to Bandar Shah, difficult ng cut into the sides of the ugh more tunnels. Arrived be sent into Russia proper the Caspian Sea to Baku

right—**A GURKHA SENTRY in ical Iranian country :** The ritory in this region is not ike the North-West Frontier ndia, with which these hardy le hillmen are so familiar. mbers of them are now on service in Iran

THE GURKHAS pride themselves on being able to turn their hands to almost anything : Here they are constructing a rough wooden footbridge, using chisel, saw, hammer and, of course, the inevitable *kukri*

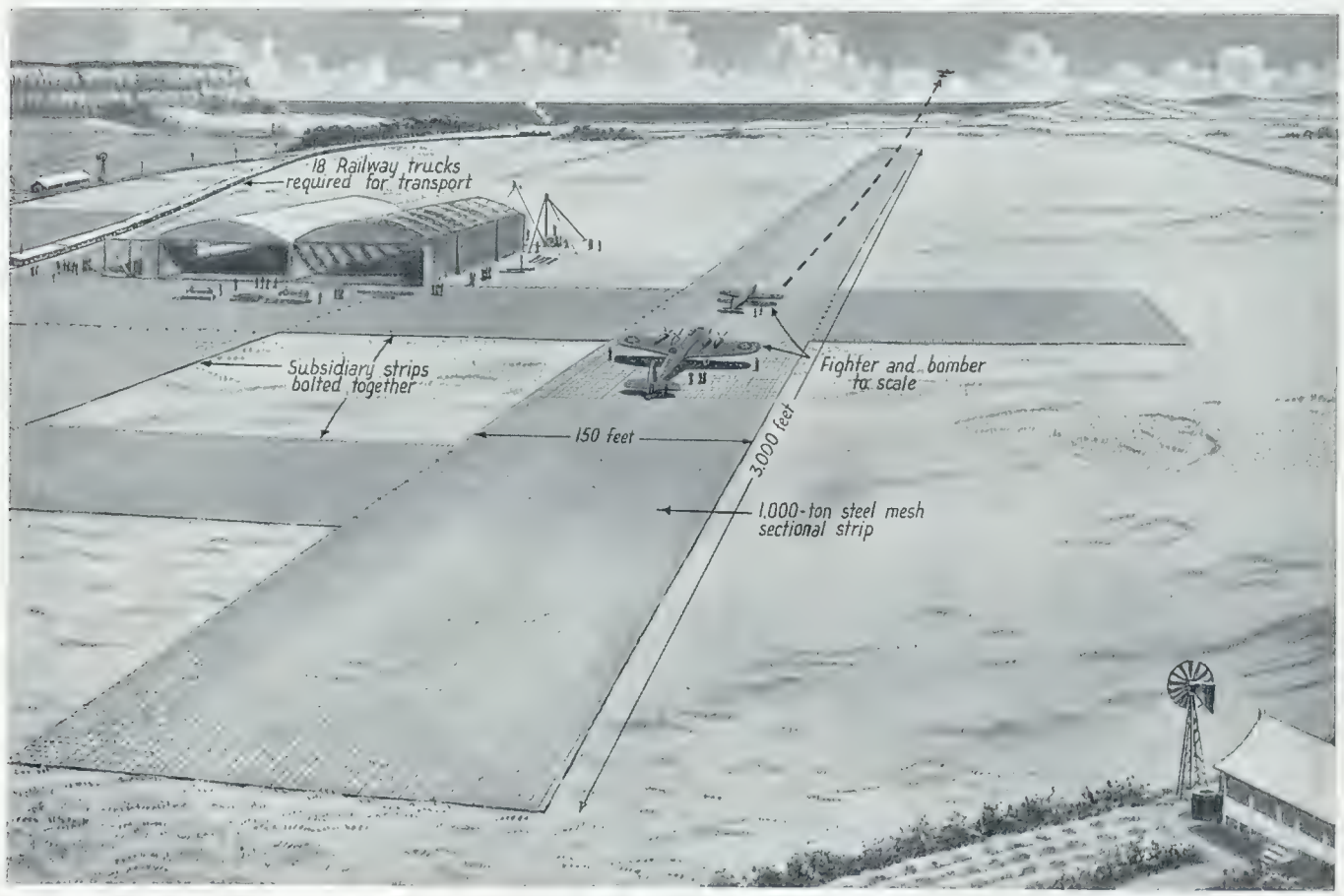
TO BEAT OUR BARRAGE DEFENCES

Two German Ideas for the Protection of Bombers



A FENDER TO PUSH OFF BALLOON CABLES AND A SAW TO CUT THEM IN TWO: A conjectural drawing of German bomber aircraft fitted with these devices—*Drawing by Roland Davies*

It has recently been reported that captured German aircraft have been found to be fitted with special fenders to ward off the balloon-barrage cables (at which, incidentally, the *Luftwaffe* pretended to scoff soon after the outbreak of war!). These fenders are really metal "bumpers" attached to the nose of the aircraft with the object of deflecting the balloon cables should the machine run into them by accident—no pilot would *deliberately* try conclusions. The weight of the apparatus is between 600 and 800 lb. and takes off some 18 to 25 miles per hour, owing to the increased air resistance. By fitting such fenders the bomb-load (or petrol-load) is correspondingly reduced, and the general manœuvrability of the aircraft impaired. In the last war it was the R.A.F. which first began experiments with such apparatus: the British F.E.2B night bomber was fitted with a fender, and was flown experimentally. British planes, on the other hand, are stated to be fitted with a cable cutter, and it is not unlikely that certain German aircraft are similarly equipped. The drawing reproduced above does not pretend to portray the actual method of attaching fenders and saws to German aircraft: it is intended only as a suggestion as to how these appendages might be fitted



A PORTABLE AIRFIELD WHICH HAS BEEN EVOLVED BY U.S. ARMY ENGINEERS so that aircraft can operate from difficult, or isolated, spots where it is not possible to lay out a proper aerodrome—*Drawing by L. Ashwell Wood*

On left—

The "portable airfield" depicted on the left has actually been constructed by U.S. Army Engineers on what was a sandy, rolling plain in Carolina. It was put together in two weeks and is now capable of accommodating fighter aircraft safely when taking off or landing: it is stated that not only can the comparatively light fighter plane make use of such an aerodrome, but also the largest and fastest bombers. This steel runway is transported to its site in eighteen railway wagons: it weighs 1,000 tons and, when erected, is 150 ft. wide and 3,000 ft. long. Other metal strips can be bolted to the main one to form a complete runway for any direction of wind. The strips have holes to allow the grass to grow through! The advantages of such a system of improvised aerodromes are obvious. In unsuitable country, or where it is not possible to hack out and level off the ground, these metal strips can be brought up very quickly—always provided, of course, that means of transportation exist for the haulage of the heavy components and that there is sufficient material to allow for *every* direction of wind. The hangars are similarly assembled, out of standard material

GERMANY'S "MOBILE AERODROMES"

By Means of which Her Aircraft Keep Up with the Panzer Divisions

A SYSTEM OF AERODROMES CONSTRUCTED BY THE GERMANS IN RUSSIA to allow aircraft to continue operations near the advancing armoured divisions on the Eastern Front—*Drawing by L. Ashwell Wood*

It would appear that the Germans, with their usual Teutonic thoroughness, have perfected a system whereby they can operate their aircraft in support of their armoured divisions despite that the latter are often moving forward at considerable speed. The "mobile aerodromes" are usually sited approximately ten miles apart, and reach up to within ten miles of the battle zone. Dive-bombers and fighters are thus available to be flung in on any sector. An enormous amount of road transport is required, and how the Russian roads will stand up to the heavy traffic—especially in the winter mud—remains to be seen. It is obvious that, as the advance continues, so fresh aerodromes have to be constructed as far forward as possible by the Germans, if they are to gain the co-ordination between aircraft and tanks which their methods of waging war demand. To keep pace, mobile units carrying complete hangars, etc., in sections are always moving forwards. These sections are numbered and standardised, are quickly assembled, and provide some cover for the dive-bombers and fighters. For major repairs, however, the aircraft would still have to be sent to the rear

HOW ONE OF THE GERMAN MOBILE AERODROMES IS ASSEMBLED—Complete hangars in sections are brought up and erected very quickly quite close to the battle-front, whilst tanks and tractors level off the actual landing-ground.—*Drawing by L. Ashwell Wood*

". . . I thought we would tow our dinghy up to the Whitley's dinghy. We started up the engines, and moved off slowly, towing our dinghy along behind us. I'm afraid the lads in my dinghy got a bit wet. . . ."

RESCUE IN THE ATLANTIC

Six Men in a Dinghy Built for Two Rescued by a Sunderland Flying-boat.

Drawings by Roland Davies

" Soon we got close enough to see the dinghy on the water. . . It was a dinghy made for only two men, but there were six in it. They gave us a cheer as we went over . . ."

THE rescue illustrated by Mr. Davies in this series of three drawings was graphically described in a recent broadcast by the Australian captain of a Sunderland of the R.A.A.F. Squadron who rescued the crew of the Whitley bomber which had come down in the sea far out in the Atlantic. It was Lockheed Hudsons of the Coastal Command which had first located them: then the Sunderland came on the scene, alighted in a heavy sea, and picked up the six airmen crammed into a dinghy built only for two.

"The Whitley crew sent out their position so exactly when they came down, and the Hudson navigators worked so well, that the leading Hudson was over the dinghy, dropping a bag of comforts, only 59 minutes after taking off. . . . Soon we got close enough to see the dinghy on the water. It was a dinghy made for only two men, but there were six in it. They gave us a cheer as we went over.

"It's a tricky business putting a big flying-boat down on a roughish sea in the Atlantic. A heavy wave can smash the wing-tip floats, or even knock out an engine as you touch down. The waves were about eight feet from trough to crest. We soon decided to have a try, and I picked out a comparatively smooth piece of water, about a mile from the dinghy. We alighted all right.

"The next problem was to get the boys out of the dinghy, and into the flying-boat. We taxied near to them. Two of my crew clambered into one of our own dinghies, at the end of a rope, and tried to paddle across to the Whitley dinghy. But the rope was too short. We made fast another length of line to it. It was still too short, even then. One of my crew then climbed out on the Sunderland's wing, and fastened the end of the rope to the wing-tip. But by that time the Whitley dinghy had drifted away, out of reach.

"Then I thought we would tow our dinghy up to the Whitley's dinghy. We started up the engines, and moved off slowly, towing our own dinghy along behind us. I'm afraid the lads in my dinghy got a bit wet. After a few minutes we brought both the dinghies together. They drifted alongside the Sunderland itself.

"The Whitley dinghy seemed to be very crowded. When I took the crew aboard, I learned that they had had trouble with their large dinghy and had abandoned it. So all of them had had to cram into the smaller one, which is designed to hold only two men. We pulled them aboard through the after hatch of the Sunderland—and just about time.

"We did get one bit of amusement before we got back to base. . . . About 30 miles off the coast, we saw beneath us one of the high-speed motor launches making full speed out towards the position where we had picked up the crews. We flashed a signal to the launch—'Have picked up six air crew from dinghy in position. so-and-so.' The launch flashed back only one word—'Blast!', and turned for home."

". . . About 30 miles off the coast, we saw beneath us one of the high-speed motor launches making full speed out towards the position where we had picked up the crews. . . ."

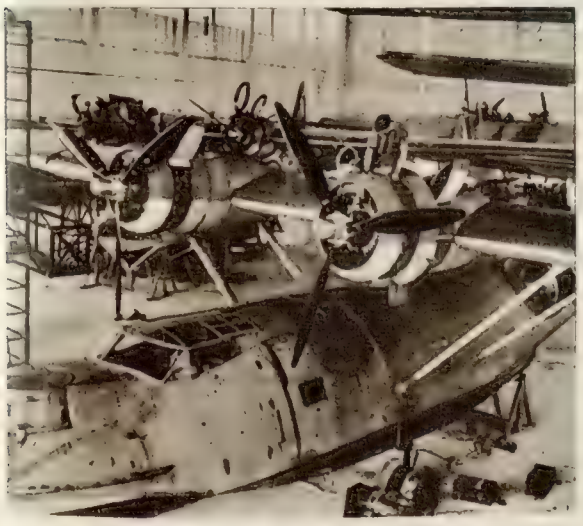
TWO OF THE HUGE FLYING-BOATS SETTING OUT ON PATROL FROM THEIR BASE AT SINGAPORE: They will probably remain in the air for the best part of the day, during which time they will cover an enormous extent of the Southern Indian Ocean. If forced down, they can, of course, alight on the water

CATALINAS OVER SINGAPORE

For several months past, American-built Catalina flying-boats have been patrolling the Indian Ocean and China Seas, operating from bases in the Far East. Their work takes them on long-distance patrols, from the civilisation and modernity of Singapore to sparsely-inhabited islands of the Southern Indian Ocean. Their watch for enemy raiders and submarines is ceaseless; and very little of mercantile and naval activity goes unheeded by their alert crews. The Catalina is an aircraft which was built expressly for long patrols over water: they can remain in the air for an incredible period

A CATALINA AIRCRAFT AT HER MOORINGS OFF SINGAPORE: In the foreground are Malay personnel of the R.A.F.

TAMIL COOLIES HELPING TO LAUNCH THE FLYING-BOAT DOWN THE SLIPWAY: Note the raised hatch of one of the twin "blisters" just aft of the aircraft's wings



MAINTENANCE WORK IN THE HANGARS AT SINGAPORE on the twin motors of the Catalina

LEAVING SINGAPORE BEHIND: A fine impression of one of the American-built Catalina flying-boats as it sets out on a patrol over the ocean in the Far East

Russia has Submarines which go Twenty Miles Under the Ice, Warships in the Black Sea, Secret Aircraft Guns which Rip Open Giant German Tanks, an Astonishing Canal System, and a Strange Fleet of Ice-breakers. . . . Here are Some Details of

TEN AMAZING SECRETS OF THE SOVIETS

Described by PETER O'NEILL

FROM his simple office in the red-walled Kremlin, Joseph Stalin, supreme ruler of 180,000,000 people, has stretched forth his hand across the 8,250,000 square miles of the Union of Soviet Socialist Republics and produced secret after secret, amazing examples of human ingenuity and labour with which to fight back the Nazi invader. It is only six months since Germany attacked Russia, but in that time Stalin's naval, military and air commanders have brought out of the fastness of Siberia, from the desolate northern tundra, from the ever-humming factories of the Donets, Ukraine and Moscow regions more new inventions, more startling developments and improvements on old methods than sprang from four years of the last war. Because some

SECRET No. 3: **"A Western European expert arranged to bring supplies from behind the Caspian Sea to Western Russia by waterways. Here again Stalin liked Five-Year Plans . . ."**

have been reported only as incidental to the vast struggle of the two greatest land-Powers in Europe, because many have never been reported at all, this aspect of the Russian war has received little attention in Britain. But America has not been slow to note, and her technicians, engineers, doctors, and fighting men are hurrying Russia-wards to watch and learn.

To understand the significance of some of the most remarkable achievements of the Russians during the last twenty years, while the world regarded the Red Army as a disorderly rabble (an impression "confirmed" in Finland) and the Air Force paratroops as a peculiar joke, it is necessary to delve a little into Stalin's strategy.

Of Russia's economic Five-Year Plans the whole world has heard; of her Five-Year military plans no details ever leaked out, and it is only now that they are being tested in the flames of war across half-Europe and the greater part of Asia that their wisdom can be appreciated. There are two great defensive positions upon which, if all else fails, the Red Armies can fall back and wage a steady war of attrition for years—in the Ural Mountains, and the mysterious area behind the Caspian Sea, north of Turkestan. With this in mind, the Red General Staff made careful preparations for war with Germany. When Hitler

SECRET No. 1: **"When Russia began the war she had a large tank fleet; she is now mass-producing 100-ton tanks . . . an horrific weapon, far superior to the biggest the French put in the field"**

trebled his seven Army divisions, then trebled them again to sixty-three, Russia did not worry very much, despite the fact that all the reinforcing was done in neighbouring East Prussia. But the minute Germany created *armoured* divisions, Stalin started to build masses of tanks and develop Red armoured divisions.

When Russia began the war she had a large tank fleet; she is now said to be mass-producing 100-ton tanks with terrific gun power—an horrific weapon, far superior to the biggest the French put in the field, half-a-dozen 72-ton tanks which scared the lives out of the few Germans who met them. Here, then, is **Secret No. 1,** and remember there are a lot of them, but they have not necessarily been in action on a big scale—yet. They 'd be grand in an offensive.

In 1937 the Germans began to build an army of 300 divisions composed of young men under thirty, an army which could not be fully ready until 1943, when nine classes of 500,000 men each had been called to the colours. Russia started the Army Five-Year Plan. In the first period, from 1936-40, they had to build a force able to *resist* an attack on two fronts, by Germany and Japan—that is, a purely defensive force; the second period, from 1941-45, was needed to make the Army capable of holding one front while an attack was launched on the other—a half-defensive, half-offensive force; the final period, from 1946 onwards, was to see an Army capable of attacking on both fronts—a purely offensive force. Stalin made careful arrangements to move his war industries to an area far from Nazi aerodromes; conscription was applied in such a form that mobilisation never affected agriculture and industry. His next problem was much more difficult. Russian railways are few, and slow. Russia cannot build good roads, because she lacks stones, and what roads are constructed soon deteriorate because of hard frost and sudden thaws. Supplying an army by rail from other countries meant more difficulties, for the gauge is different, and anyway, their total length in the whole Soviet Union is exactly the same as the French railway system!

A Western European expert solved the problem by arranging to bring supplies from behind the Caspian Sea to Western Russia by waterways. Here again

SECRET No. 2: **"Linking Leningrad with the White Sea, via Lakes Ladoga and Onega, the canal was . . . intended for 35,000-ton battleships . . . but there was no time for that . . ."**

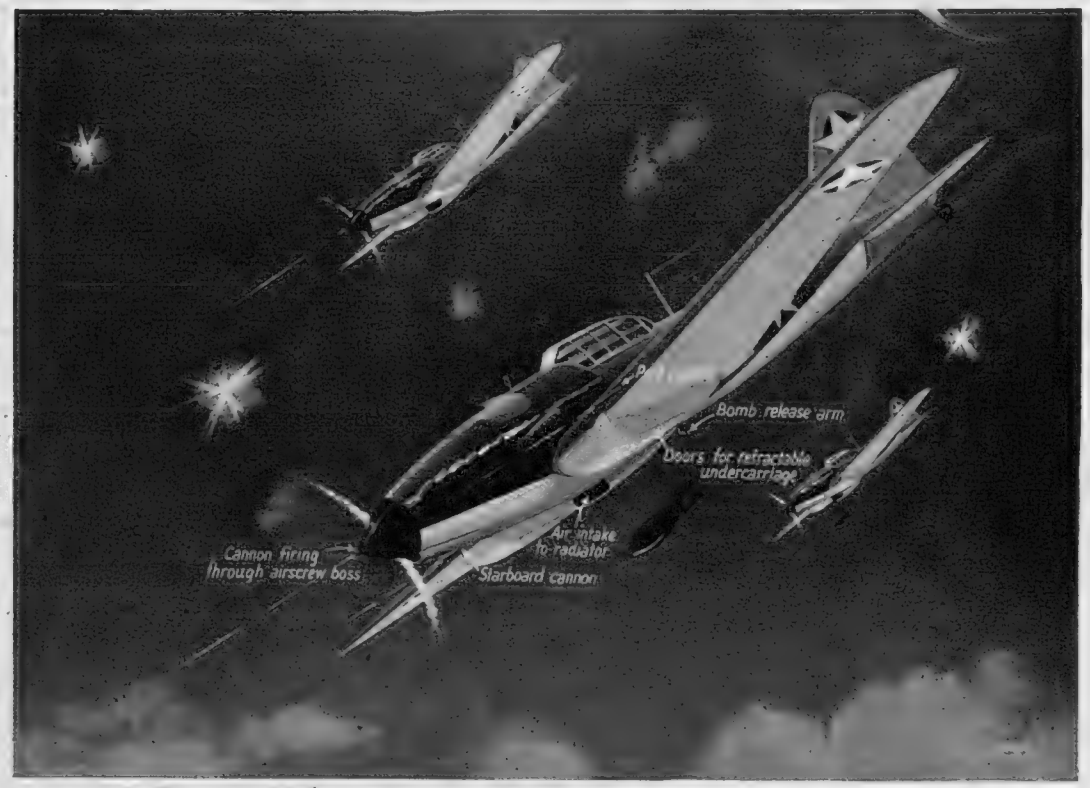
Stalin liked Five-Year Plans. First Plan to be completed was construction of the Stalin Canal, whose existence was certainly not a secret, but whose capabilities certainly rank as Russian **Secret No. 2.**

Linking Leningrad with the White Sea, via Lakes Ladoga and Onega, the canal was first deep enough for 7,000-ton vessels, medium cruisers. It was intended to make it suitable for 35,000-ton battleships, because the lakes can take these capital ships, but there was no time for that. Second Canal Plan came to the world as a complete surprise. Look at a map of Russia and see how the Don, running into the Sea of Azov, curls until it nears the Volga, emptying into the Caspian Sea. Across the sixty miles of land Stalin's engineers are building **Secret No. 3,** a dead-straight canal with but two sluices, because the Don is only 25 metres higher than the Volga at this point. The strategic importance of this might become very great. Russia's whole canal system was based on her mighty Volga, which wriggles a serpentine course from the Caspian across all Western Russia to somewhere near the Valdai Hills, where it originates in a marsh, not, as most rivers, in hills. Its 2,400 miles, thirteenth longest river in the world, have been expanded and developed by canals, so that by connecting the Valdai Hills end with Leningrad—and the Stalin Canal—submarines, destroyers and small ships, apart from countless thousands of barges laden with materials of war, will be able to travel from the Baltic or the White Sea—even from far Vladivostok—to the Caspian and Black Seas. The link with the Black Sea was obtained through a narrow strait from the Sea of Azov. Building of a dam across this strait raised the water-level in the Sea of Azov so that it could take big ships, and then a canal (also unnoticed in Britain) across the Isthmus of Perekop (joining Crimea to Russia) opened the waterway to Odessa, facing the main mouth of the Danube. As the Danube takes 3,000-ton boats—equivalent to the load of six 50-wagon trains—supply problems for the biggest army in the world were solved. But now Russia has lost this district to Germany, and the Nazis are seeking to exploit it to the full.

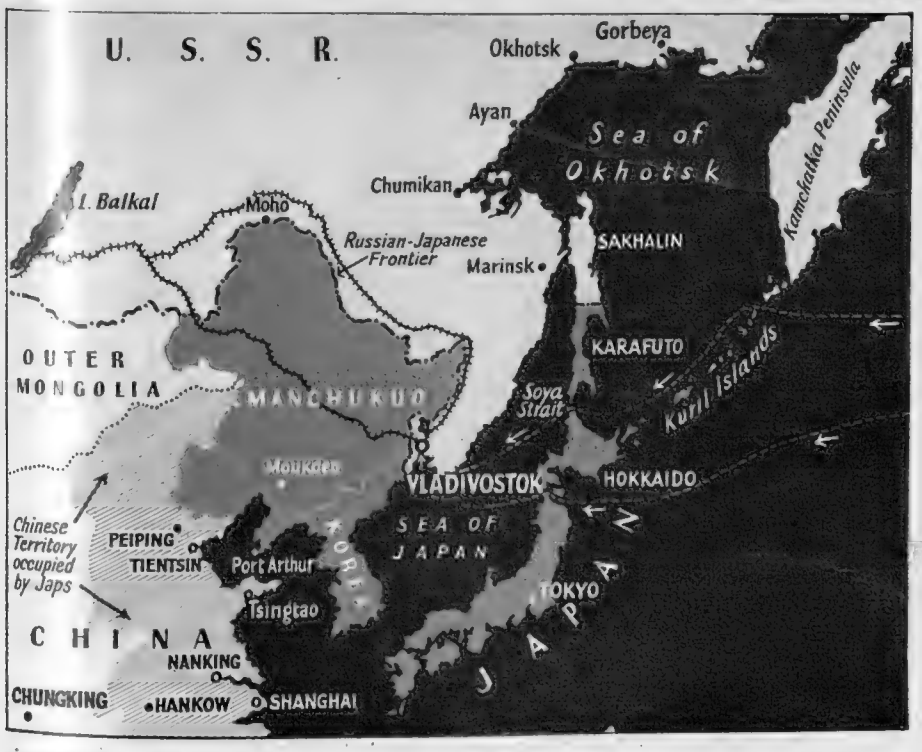
It is a fact that for their attack on Germany the Russians planned to reach Pressburg, in Czechoslovakia, and use this area as a springboard. Germany—and Britain—got to know, and as the Russian Army Plan could be completed as swiftly as Germany's, which I have already explained, the Nazi General Staff realised that the danger was serious. Germany took Czechoslovakia unhindered by politicians who did not want any Russian ascendancy, but realised they had to fight when Poland was invaded. London and Paris actually expected Russia would join them in September 1939, but the Russians had precise information about the real value of the German Army, Panzer divisions, and *Luftwaffe*. They realised also that in the event of an open alliance with the Allies they could expect no aid, even by air. This was what happened to Poland. Gaining time by the signature of his pact with Hitler, Stalin took part of Finland to form a northern shield for Leningrad, Bessarabia to make a southern buttress, and rushed defence works and stores in the Caspian region. How wise these precautions are seen to be to-day! Stalin noted the dominant lessons of the French campaign—that Germany succeeded beyond even the dreams of the Nazi General Staff (who never anticipated French armies throwing in the gloves after but two hours dive-bombing, as happened on the Meuse and Sedan), and that when the French were thrown back on the Somme and Loire the Germans still believed in their fighting capacity, which was why the Germans made the biggest mistake of the war in not directing their main forces against Britain, who, through Dunkirk, recovered the backbone of her Army, the professional soldiers and regular officers. Stalin noted Germany was forced to war before she was ready—proved by the fact that at the end of May she could not cope with France and Britain at the same time. Russia had two years to complete her preparations. **Secret No. 4,** then—she raised 200 divisions of men under twenty-five, a huge second-line Army and reserves of 10,000,000 men—10,000,000 men! She put the lower quality troops and material into the Finnish campaign, which she knew she would win, anyhow—of course she did: even the rest of the world said so while the fight was at its height.

Secret No. 5 was the I 18 fighter, with a speed of some 400 m.p.h., cannon and machine-guns: it was the equal of the Spitfire and accorded Spitfire treatment to the first foolhardy, vainglorious *Luftwaffe* units sent into the fray. These were backed by good, fast, heavy bombers, and enormous quantities of the D.B. bomber, 260 m.p.h. only, but good enough for night bombing.

SECRET No. 5 **is the aircraft which Russia had at her command. As no picture of the I 18 is available, we show here the I 16, its predecessor, which bore the brunt of the initial German attacks**—*Drawing by Roland Davies*



SECRET No. 6: **"The Stormovik dive-bomber, to which Lord Beaverbrook paid tribute on his return from Moscow, is equipped with what the Germans have called the 'mad torpedo'"**—*Drawing by L. Ashwell Wood*



SECRET No. 8: **Vladivostok, "Dominator of the Orient," which Stalin made worthy of its title and has now converted "into a mighty fortress, a perpetual pistol pointed at the heart of Japan, third member of the Axis"**

Secret No. 6 might well be the strange, devastating guns installed on Russia's latest fighters—guns which smash heavy shells through German tanks as if they were of butter, sending columns reeling off the roads in piles of jagged, smoking, useless metal. In addition, the Stormovik dive-bomber, to which Lord Beaverbrook paid tribute on his return from Moscow, is equipped with what the Germans have called "the mad torpedo." This gives a rather erroneous impression as, in fact, there is no such thing as an "aerial torpedo" being used by planes in the sense that the missile has its own motor. Moscow radio has stated this month (on November 13) that a new projectile now used by the tank-hunting Stormoviks leaves a fiery trail after being launched, smashes through tank armour and explodes the vehicles like balloons.

It is most probable that this is a development of the cannon carried on many planes, including some in the R.A.F., and in particular, the American Bell Airacobra, which is fitted with a 37-mm. cannon. This is very little smaller than the anti-tank shell used on the ground. The Russians have probably fitted a big cannon between the wheels of the Stormovik, which also carries bombs. A heavy, armour-piercing shell would have the velocity of the gun's explosion, plus its own weight, plus the velocity imparted by the plane's dive. This would account for its terrific force.

In addition, the Red Air Force has a plane with six motors—the L 760—which by only 2 ft. misses being the biggest plane in the world. When acting as a bomber it has a crew of ten and a range of 1,864 miles at 186 m.p.h. Bomb-load is secret, but when it is realised that as a transport plane (capable of carrying paratroops) it can hold sixty-four people, the tonnage of explosive that can be taken aboard with only ten men must be very high. Its six Hispano Suiza engines develop a total horse-power of 6,600 and with a wing span of 210 ft., it weighs 103,000 lb.

Secret No. 7 is the magnificent fleet of ice-breakers which will keep open this winter the approaches to Archangel so that the United States can pour in supplies. This is the reason for America's abandoning Vladivostok as their main port of arrival—a move which at first mystified

(Continued on following page)

SECRETS OF THE SOVIETS

(Continued)

everybody. There are twelve of these lumbering, slow vessels, and three or four are 12,000 tons—a tremendous size for an ice-breaker. They will frustrate Hitler in the Arctic.

Vladivostok means "Dominator of the Orient." What an apt name! And **Secret No. 8** is how Stalin has made it worthy of its title, has converted it into a mighty fortress, a perpetual pistol pointed at the heart of Japan, third member of the Axis. In the same way as he employed his scientists and explorers, in the bitter Arctic waters, to lay the basis for vast strategic plans, Russia's Prime Minister asked them to develop the world's strangest supply route, across the brow of the earth. To-day steamers travel on a regular schedule from Murmansk to Vladivostok—three times the width of the Atlantic—carrying iron and steel, machinery and workmen to forge the mighty pistol that is Vladivostok. Here, between the immense estuaries of the rivers Oussouri and Amour (the Amour is 2,500 miles long), they built a

Above and on left—

SECRET No. 9: The Russian Black Sea Fleet has fifty submarines massed behind the Bosphorus and Dardanelles. *On the left* are two of the submarine chasers of the Russian Fleet

port capable of dealing with everything America, for instance, could send.

At Vladivostok is based a big fleet of submarines —never fewer than fifty—and many squadrons of warplanes. Vladivostok is not ice-free, however, and so the submarines are of a very special type—so are their crews. They travel twenty miles under the ice to reach the open sea. This is perhaps Stalin's most amazing achievement, surpassing Jules Verne, rivalling the fantasies of America's scientific pulp magazines, which used to be so familiar on your bookstalls. Just imagine the queer, grim journey in pitch blackness, where periscopes could not be used. Think of the strain on commander and men. To-day Vladivostok takes her part in the chain of Pacific bastions held by the anti-Axis Powers, the Aleutian Isles (U.S.A.), north of Japan; and Hong Kong and Singapore (Britain), Manila (U.S.A.) and the Dutch East Indies, south of Japan. The Russian city is a greater menace to the warmongers of Tokyo than Antwerp, Zeebrugge, Dunkirk, Calais and Boulogne combined are to Britain. Japan's fleet fears the fate of the Italians at Taranto; her matchwood towns, all well within range, fear the fate of Bremen and Hamburg and Kiel. Japanese aviation is far removed in military value from the *Luftwaffe*.

Secret No. 9 has been the most closely-guarded in the world. Here are some authentic details of the Red Fleet that now battles in the Black Sea. The Russian Fleet was envisaged by Lenin on the proposed canal system I have explained. Stalin improved on the idea of just an Atlantic Fleet based on Murmansk by constructing a tri-purpose navy for use in Baltic, Atlantic and Black Sea by means of the Stalin and Volga-Don canals. He abandoned the Tsar's policy of holding the Bosphorus and Dardanelles to give breathing-space to the Russian Navy. Stalin holds that these vital straits are in the hands of a friendly and powerful foreign Power—Turkey—and this adds to the security of Russia. It is a fleet he has massed behind the straits to guard the area that comprises Secret No. 10.

Pariskaya Kommuna, 23,000-ton old battleship, speed 18 knots, twelve 12-in. guns, sixteen 4·7-in., a number of 3-in. A.-A. guns, and catapult planes.

Staline, aircraft-carrier with twenty-two planes.

Kyrov and *Maxim Gorky*, two modern cruisers, 8,800 tons, speed 35 knots, nine 7·1-in. guns, six 4-in. A.-A. guns, six 21-in. torpedo-tubes.

Three older cruisers, *Krasni Kavkas*, *Chervonaya Ukraine* and *Profintern*. The first has four 7·1-in. guns, eight 4-in. A.-A. guns; the others fifteen 5·1-in. guns and eight 4-in. A.-A. guns, speed 29 knots.

Eight modern destroyers of very great size for this class of ship—2,900 tons, speed about 40 knots.

Twelve smaller destroyers of 1,800 tons with four 5·1-in. guns; speed 37 knots.

Four old destroyers—1,150 to 1,400 tons, speed 30 knots.

Two sea-going torpedo-boats, 700-750 tons, 25 knots.

Fifty submarines.

In the Baltic—where, be it noted that, although they have nothing to match the German battleship *Tirpitz*—the Russians have never been brought to a fleet engagement—there are still two old 23,000-ton battleships, six 2,900-ton destroyers; twelve of 1,800 tons, fifteen old destroyers, and twelve sea-going torpedo-boats.

Secret No. 10 is the area to which I have referred several times—the great new industrial belt behind the Caspian and Aral Seas, running right to the Chinese border. Into this area Stalin has packed a great number of factories, thousands of workers, a first-class communication system, and

SECRET No. 10: "The great new industrial belt behind the Caspian and Aral Seas, running right to the Chinese border. Into this area Stalin has packed a great number of factories, thousands of workers and a first-class communication system"

now he is busy arranging the links with India and Iran for which it is so well suited. Here the Russians have a greater producing machine than in the Urals, a greater war potential than Hitler, or the world, dreamed of. To it, as to the Ural region, he is shunting factories wholesale from the threatened lands around Moscow and Rostov. Machines big and small, huge and delicate, are being carted hundreds of miles, to be reassembled in strange surroundings. There have been astonishing feats of organisation and adaptability, factories which produce hundreds per cent. more after a terrific shake-up, but I cannot go into this now. Behind the Ten Secrets, behind the resistance of Russia, the reason for Stalin's foresight is to be found in the Russian intelligence system, far-flung throughout the world. Its ramifications are almost unbelievable, certainly not a subject for discussion at the moment. But one instance can be given. It is vouched for by a man intimately concerned. The story helps to show why, instead of attacking France at the same time as Germany, on May 10, 1940, the Italians kept off the battlefield till France was decisively defeated. Four years before the war France started building important forts on the Italian border, especially near Mentone. A number of French-speaking Italian officers of the Fascist Engineer Corps entered the French construction corps secretly, and on their return to Italy when the forts were built, were able to present Mussolini with reports and plans in such detail that it took two porters to carry them into the Italian Ministry of War. Mussolini had a special summary running to eighty pages. The Italian Army Staff decided they had no artillery capable of dealing with the forts and told Il Duce it would take five years and 5,000,000,000 lire to build them. "I cannot wait so long. We must renounce an attack on the French," Mussolini is reported to have said. This was in 1938

A few months later the French Ministry of War was offered a voluminous dossier in Russian—the full report of the French forts. Russia said her General Staff was very anxious to be absolutely certain all the details were exact. The report was translated in the Soviet Embassy in Paris and submitted to the French General Staff, who agreed that everything was perfectly accurate. It was documented with the comments of the Italian General Staff. The Russian Secret Service in Rome had succeeded in photographing it in its entirety!

What other secrets are still to come from the Kremlin?

ROLLING OUT THE BOMBS

THE FOUNDRY IN WHICH THE BOMB-CASINGS TAKE SHAPE: The labourers here are men, although great numbers of women are employed in the factory on other operations during the manufacture of the bombs

ON THE BOMB-PRODUCTION LINE: The casings are machined; hydraulic presses have hollowed out the billet and squeezed it out to twice its original length. Before the tail is shaped, the inside of the casing is machined and its outside roughly dressed

THE LIFTING LUGS BEING PUT ON THE BOMBS: It is by means of these that the bomb is lifted into the bomber's racks. The special tails seen on these bombs are called "transit bases" and are put on to make the bombs easier to handle

A GIRL MUNITION-WORKER trundles one of the new bomb-casings like a football!

A TRAINLOAD OF BOMBS, destined for the R.A.F. Bomber Command, and eventually for Germany, comes up out of the storage galleries

Day and night, in an endless stream, the bombs are pouring out of the steelworks and munition factories of Britain. Our air offensive is increasing with every week that passes, and to keep our bombers supplied with the thousands of tons they need each month everyone is working at top speed. The "beautiful bombs" mentioned by Lord Beaverbrook some time ago are becoming more "beautiful," and bigger, and more deadly. The pictures given here show processes during their manufacture

RADIO ENTERTAINMENT ALL ROUND THE CLOCK

The Twenty-four-hour Programme Broadcast from London Every Day to the Farthest Corners of the Empire—A Little-known Activity of the B.B.C. Operated from a West End Theatre

Described by
CHARLES GRAVES

QUITE unknown to the vast majority of listeners in Great Britain, a round-the-clock radio programme is given day in and day out from a theatre in London. This is controlled by Cecil Madden, head of the Empire Entertainments Unit, and is a real joy to all our troops scattered throughout the Empire. Every week no fewer than fifty programmes are sent out, of which twenty are exclusively for British forces overseas.

The Unit has never once failed to broadcast any programme, even under the most violent *Blitz* conditions. The dress circle is full of bunks for artists, bandsmen and members of the staff; the Royal box is the recording room; the Royal withdrawing room is the gramophone room. The stage has been built out over the orchestra pit, so that star artists can concentrate on the live audience, usually troops. One of the cloakrooms is used for the Message Department; the theatre bar is a canteen; and Cecil Madden himself sits at his desk in the star dressing-room. The stage door, which has seen so many stars come and go, now sees radio comedians, blonde crooners and dance bands with their many instruments. For the Empire Entertainments Unit is determined to give the troops the best it can—Geraldo's Orchestra, Jack Payne, Joe Loss, Debroy Somers, the R.A.F. Dance Band and the rest.

Remember it is evening in Australia when it is dawn in London; evening in the East at midday here; evening in Africa when it is evening in London; and evening in North America after midnight in Britain. All round the clock famous stars are performing at the Empire—Bebe Daniels and Ben Lyon, Vic Oliver, Tommy Handley, Beatrice Lillie, Jack Warner, Frances Day, Robert Donat, George Formby, Murray and Mooney—but the list is endless.

When I paid the theatre a visit, a platoon of French-Canadians were rehearsing French-Canadian songs, and very jolly they were, particularly one with the refrain "Nous aimons le ragoût." Evel Burns, the Australian pianist, was at the piano, in silver fox. The backcloth was a huge coloured map of the British Empire in red and yellow, with the superscription "London calling."

After the Canadians went, a party of New Zealanders arrived for the "Magazine for New Zealanders in the Middle East." The troops out there are particularly grateful for these programmes. Thus an infantry captain recently wrote to Anne Shelton:

"Here we are in the desert, warlike, full of hate for the Hun, ready for war, and you come and sing. . . . Everything else goes into the background. . . . To-night's broadcast was the first I had heard of romance in seven months of this eternal sand. . . . You burst in and turn our thoughts to other things. . . . You 're worse than a *Blitz*, we are needing you so."

Every week seventeen of the fifty programmes have a space for special messages to be sent personally to the overseas forces—to Malta, Gibraltar, India, the Far East, to Africa, Newfoundland, Australia, New Zealand, Canada and so on. At the moment there is a long waiting-list of people requesting to send messages in this way. These are being worked off at the rate of over 200 a week. They are mostly from parents and sisters to their sons and brothers. Occasionally, a new daughter-in-law is introduced over the air to her husband's parents who have never seen the girl, but at last hear her voice—for the first time. Messages must not exceed forty words. Usually, the speakers can think of nothing more interesting to say than "Hallo! How are you? I am very well. Jane sends her love"—or words to that effect. One of the staff, however, tries to suggest that they might like to give more interesting information, and usually succeeds.

There are both comedy and tears on these occasions. Old ladies forget their spectacles and cannot read out their messages. Whereupon other old ladies or old gentlemen lend them their glasses, but agitatedly need to have them handed back along the row before it is their turn to speak. One of them once knocked the "mike" over. Nearly all bring photographs of their boys. One father and mother had arranged a little cross-talk, and ended up by saying that their Aberdeen terrier sent his love, and imitated his bark over the "mike." A young Australian soldier said to his mother: "Listen, Mother. Big Ben is not a gramophone record. I 've just been down to see, and it 's still working." A South African fighter pilot spent his forty words in saying what a wonderful time he was having going round all the grand places. "I 've already been to the Savoy, the Dorchester and Claridge's," he said, "and I 'm now going to visit Quaglino's, the Berkeley, the Mirabelle, and the May Fair." An Australian said to his mother: "All the doors of the best homes here are open to me." Whereat one of his cobbers rudely interjected: "That 's true, but how you knock!"

One of the more dramatic series of messages was sent by the first bunch of men back from Tobruk to their comrades still there. This was a star programme, with Arthur Askey, Stanley Holloway, Vera Lynn, Geraldo, Leslie Banks and Mr. Jetsam. What 's more, Sir Claude Jacob spoke in Hindustani to the Indian troops, and the Chief of the Polish General Staff addressed his men in their own language.

It must be pointed out that Vera Lynn is unquestionably the Forces' favourite. There was a popularity poll which she easily headed, but with Anne Shelton coming up fast, in second place.

The R.A.F. boys in Canada and the United States now learning to fly under the Empire Training scheme have an officially appointed Girl-Friend. This is Jane Welsh—or rather, they had. For it was found that many of them, young as they were, had wives, and so Jane is now their official Big Sister.

All day and all night programmes are leaving on short waves in a non-stop stream of music and friendly links with Britain to all corners of the globe. Our British bands are popular in Latin America, for whom they perform especially in the small hours.

The first of these programmes was started a year ago. It went to the Gibraltar Garrison, with Joan Gilbert as the *commère*. Promptly a cable arrived: "Fifty military police acting spokesmen all ranks Gibraltar report programme smash hit. Everyone wildly excited Suggest extensions immediately."

In addition to these set programmes taking place in the theatre, many outside events are recorded on the spot and then transmitted from this theatre. One of the earliest was "London After Dark" in June 1940. It was scheduled for 11.30 p.m., and at that exact moment the sirens wailed in London and were thus heard all over the world. *Time* wrote: "Unexpected was the co-operation of Adolf Hitler, whose bombers flew over London"; while *Variety* said: "The long-range view of London in close-up must command deepest respect for the morale and sturdiness of this people. Consider how terrorising are the sounds of these sirens percolating through 3,000 miles of stratosphere! The slightest imagination can conjure up how terrifying must be the war of nerves right on the scene of action."

This quick-fire programme, from a visit to an hotel kitchen, a Palais de Danse, an A.R.P. post, an aircraft battery, a railway station and Piccadilly Circus, wound up with J. B. Priestley in "The Shadow of Big Ben." During one raid, permission was obtained to broadcast while it was taking place from the actual ruined portion of Buckingham Palace.

Shelter life formed another part of the programme, and an officer in a gun-pit in Libya described his feelings in the broiling sun when he heard men and women speaking a hundred feet below the ground on the cool platforms of the Piccadilly Tube in London.

"Bundles for Britain" formed the subject of a visit to W.V.S. depots. Michael Standing did a series of street interviews with passers-by called "Meet John Londoner." The subjects chosen for a particular week vary violently from the cigarette shortage to the situation in Russia. One commentator stopped a policeman on a bicycle and asked him what he was doing. Quick as a flash came the literal reply, "Sweating like the devil."

The Provinces are not forgotten, and "Britain Goes To It" is an excellent series of visits to munition works and docksides. When Hitler had his revenge on the star of *The Great Dictator* through the *Luftwaffe* bombing Charlie Chaplin's birthplace in the Kennington Road, the Empire Unit were on the spot in a very few minutes and even helped the A.R.P. to clear the debris.

An unusual broadcast was produced in the dining-room of the Savage Club in Carlton House Terrace as a salute to the Savage Club in Melbourne. As chance would have it, this was fixed for the morning after the fiercest raid on London then known. Masonry was lying everywhere, but there was no flagging of the Savage spirit.

How Cecil Madden manages to maintain this non-stop variety (in both senses of the word) I don't know. It is certainly one of the most valuable contributions to the war effort.

AN UNIQUE CHAPEL FOR SAILORS IN LIVERPOOL: Attached to the Flotilla Club in the much-bombed shipping port of Liverpool is this unique Chapel of St. Columba. It is used by all religious denominations for services. Over the altar are ships' badges, and the furniture comes from a famous luxury liner which has now been scrapped. The Chapel is actually on the dockside, only a few yards from where his Majesty's ships tie up

THE SHAFTESBURY HOMES AND "ARETHUSA" TRAINING SHIP

HORACE is just five years old, but has never known a real mother's love, as she passed away when he opened his eyes on earth. He has had various foster-mothers, the last of whom eventually married the father. The child was, however, neglected, and the home conditions were far from satisfactory. While the child seemed beyond control at home, the schoolmistress gave a very good report of him. Now all is changed, for he is experiencing care, happiness and childhood companionship in the Society's Home for small boys. Will you, whose little child knew happiness and a mother's love at five years of age, send a special thanksgiving gift to help support Horace? The address is: 164, Shaftesbury Avenue, London, W.C.2.

PICTURES from the HOME FRONT

MEMBERS OF THE HOME GUARD DEMONSTRATE HOW THE BRITISH-MADE SNOWSHOES FOR RUSSIA ARE WORN: At a factory in Britain hundreds of thousands of pairs of snowshoes are now being turned out for despatch to Russia, to help the Soviet Army in its winter campaign. The shoes are rather like large tennis-rackets, with a short ski attached to the underside. They are made of stout ash wood

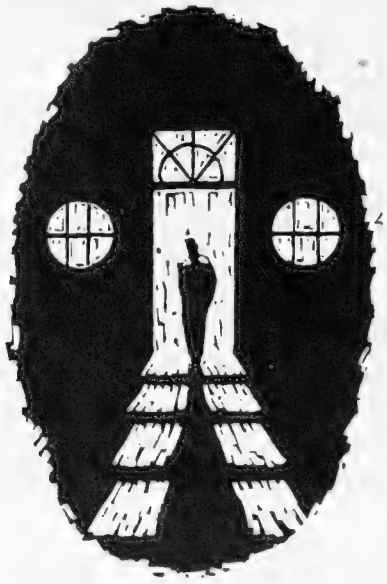
GIRLS AT WORK IN THE FACTORY MAKING THE SMALL-TYPE SNOWSHOES INTENDED FOR THE WINTER CAMPAIGN IN RUSSIA

THE FIRST MINERS IN BRITAIN TO ENJOY HOT LUNCHEONS AT THE COAL FACE: Miners in the depths of the Easthouses Colliery in Midlothian were the first miners in Great Britain to enjoy hot meals actually at the coal face. The scheme was tried out recently, and it is hoped that all the mines in the country will eventually follow suit. The Member of Parliament for Streatham, Mr. David Robertson, is sponsoring this novel scheme

CHRISTMAS PUDDINGS FOR TROOPS OVERSEAS: These are already being despatched from the Army Comforts Depot in Reading to British troops serving overseas. Gifts are received and sent away every day, and they are greatly appreciated by the Forces

ROYAL ENGINEERS TAKE A COURSE ON TRACTORS: Certain members of this Corps are now undergoing a course of training in the handling of "creeper-track" vehicles. These have a variety of uses, including felling trees and aerodrome levelling. Schools have now been set up in various parts of the country as training-centres for this purpose

A FARM GOES UNDER THE HAMMER: Discarded, or unwanted, farm equipment now fetches very high prices when a farm is put up for auction. This picture was taken when Mr. Paul Oliver, auctioneer, offered a Massey Harris tractor for sale at Myddleton Hall Farm recently. It proved to be worth more than its original cost, although it is seven years old



When the black-out is just a memory

Streets blaze again with lights . . . ears strain no more for sirens . . . peace blesses this land again. Will you then have the deep satisfaction of knowing that you played your part in bringing these better days?

Peace will mean more to you if there is no duty you have neglected. One duty is this. Buy 3% Savings Bonds or 2½% National War Bonds with every pound of your bank balance in excess of your known wants.

The Government needs your money for the war effort—and needs it in this way. And this need is your personal concern. Act NOW. Time presses. Consult your banker or stockbroker today about investing in 3% Savings Bonds or 2½% National War Bonds.

3% SAVINGS BONDS 1955-65

2½% NATIONAL WAR BONDS 1949-51

These are full Trustee Securities and are obtainable through any Bank or Stockbroker. Price of issue £100 per cent. No limit to holdings. For each of these securities there are also a Post Office Issue and a Trustee Savings Bank Issue with a maximum subscription of £1,000.

Issued by The National Savings Committee, London

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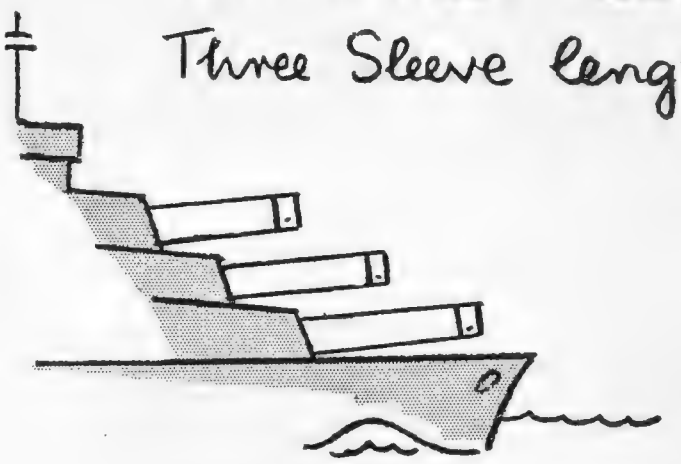
Fore-armed means Three Sleeve lengths



● Summit Shirts for the Services. A choice of sleeve lengths: good stuff: good style: long life. Prices—Royal Navy, 9/6 upward (white stiff collars 1/- each). Army, 12/6 upward (including two collars to match). R.A.F., 12/6 upward (collars to match from 1/6 each).

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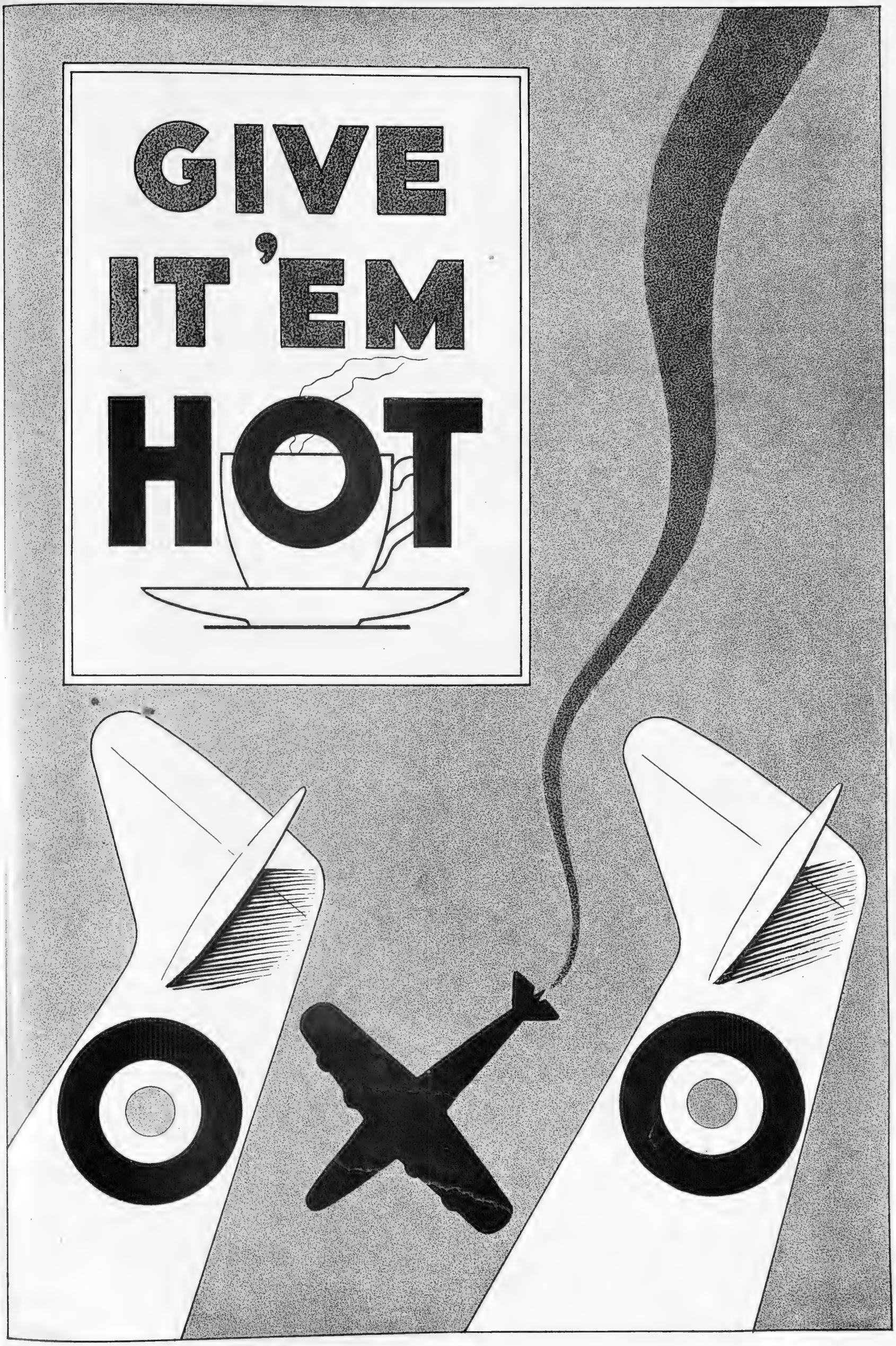
GIVE
IT 'EM
HOT

LOOKING INTO

LIFE is useless without investigation, because investigation means improvement and therein lies continual progress.

Those who produce work of quality ask for investigation and welcome comparison, fearing nothing in competition.

They build up their business through the ears of the public as well as through their eyes.

The Chatwood Security is work of quality, and is exactly what we say it is without any "ifs" or "buts." There is nothing just as good for less money.

Because something costs little money it does not follow that it is cheap. The fundamental principle of purchase is value received for money paid.

The Chatwood Security has always been just the little more that can reasonably be asked for work of quality. It will stand investigation.

J. E. S.

THE CHATWOOD TRADITION

"ACHIEVEMENT IS BUT ANOTHER MILESTONE ALONG THE HIGHWAY OF PROGRESS—THE END OF THE JOURNEY LIES EVER BEYOND."

THE CHATWOOD SECURITY

THE CHATWOOD SAFE CO. LTD.

BANKERS' ENGINEERS,

HEAD OFFICE: SHREWSBURY, ENGLAND

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QUID PRO QUO

"I say, Donald, I wonder if you'd mind swapping your weekend leave with me. I want to run up to Town."

"*Utterly, finally and categorically—no.*"

"Now don't be so difficult, Donald, old man. It's most important. My girl's got a spot of leave, too, and I haven't seen her for centuries."

"*Well, supposing I do a deal with you, what do I get out of it?*"

"How about a copy of Mein Kampf—or a nice pair of trousers?"

"*Nothing doing. But there is just one thing . . .*"

"Well?"

"*My Gestapo tells me that you have hoarded away in your holdall, a bottle of the true, genuine Rose's Lime Juice.*"

"But this is blackmail."

"*So what? Rose's nowadays is scarcer than hot water bottles in the Western Desert. And a desperate man will stick at nothing.*"

"You're a hard man, Donald, but it can't be helped. Take my bottle of Rose's Lime Juice. But remember, I expect you to repay me with at least a crate of Rose's after the war."

ROSE'S—*the Wise Man's Nightcap*

Give up your Binoculars.

every pair is needed for National Service

Kershaw's Famous Prismatic Binoculars, British all through—the world's standard of quality—will be again available at a later date

KERSHAW

SOHO LIMITED

COLHAM MILL RD., WEST DRAYTON, MIDDLESEX

COMMUNICATIONS

OLD AND NEW

MESSAGES BY FIRE

A SPECTACULAR method of swiftly conveying information over great distances, and one that survived up to quite recent times even in our own country, was the lighting of beacons on the hill-tops. The many Beacon Hills you will find dotted about the map still preserve in their name this ancient system of communication.

Britain's Blaze of Beacons

Our ancestors lit beacons to tell of the landing of Cæsar's legions. When the great Armada swept up the English Channel, all England blazed with beacons. In 1804, Sir Walter Scott tells of a chain of beacons from the Scottish hills that raised a huge army to challenge a much-heralded invader who never came.

The March of Progress

In the middle of the 19th century began the great work of invention and pioneering in the field of cable and wireless communication that has made it possible to send a message from London to New York and get a reply back within 24 seconds. In this amazing development Cable and Wireless Ltd. has played the leading part, linking the British Empire and the world by a system of overseas telegraphy that is swift, sure, and inexpensive.

CABLE AND WIRELESS LTD

The only British owned and operated Overseas Telegraph Company in this country

Coupon Sense

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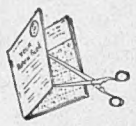

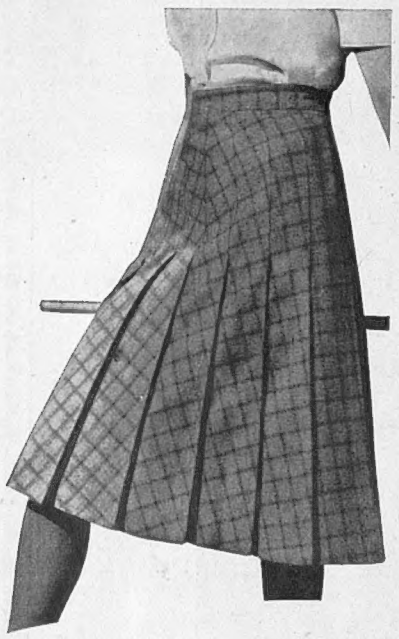

Streamlined Pleats

Knife-edged pleats all round, graduating into snug-fitting, single material over the hips; pleats which give complete freedom of movement yet cannot gape or come unstitched. Is there another skirt so practical and, at the same time, so smart and slenderising? Good drapers and stores everywhere stock the "KONERAY" in a variety of quality materials. There's no wiser buy for six coupons to-day.

Issued by C. STILLITZ
Leamington Spa,
Worcestershire, England

"GORAY"

"Koneray" PATENT PENDING

PLEATED SKIRTS

IN QUEST OF GOOD HOTELS

BY ASHLEY COURTENAY

Owing to rationing of paper and the demand on our editorial pages, it is necessary to omit from time to time Mr. Ashley Courtenay's usual weekly article. We would, however, emphasise that his services are always available for advising SPHERE *readers by post of hotels, both large and small, known to him personally. Letters, accompanied by a stamped, addressed envelope for reply, should be addressed to him c/o The Editor,* THE SPHERE, *Commonwealth House, 1, New Oxford Street, London, W.C.1. Personal and telephone inquiries, however, cannot be accepted.*

CHURCH STRETTON, Shropshire. THE HOTEL. Mostly full, but the occasional vacancy in such a peaceful and picturesque district is worth waiting for. There are few hotels where homeliness is such a primary characteristic. Under the direction of Mr. W. Dennis Copeland and family.

LEATHERHEAD. THE RED HOUSE. Always very popular amongst Business and Retired people because of its accessibility to Town and its comfort. Vacant rooms are few and far between, but they are worth waiting for. Tel.: 2271.

SPREYTON, Mid-Devon. FUIDGE MANOR. Perfect peace, perfect comfort and perfect relaxation in the very heart of the country. Hard court, squash court and cheery licensed club room. Inclusive terms from 5½ gns. A few rooms now unexpectedly available for the winter months. Tel.: Whiddon Down 205.

TORQUAY. HEADLAND HOTEL. Though full at the moment, it is an hotel to make a note of should you wish to enjoy quiet luxury midst peaceful surrounds. The Management will welcome your enquiries.

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BOURNEMOUTH

Traditional superiority. Combines all the factors that one expects to find in a first-class hotel. Restaurant, grill room, men's bar, Richmonde Lounge—the social rendezvous of Bournemouth—with Marcel Torrent and his orchestra. Apartments each with P.O. telephone and most with private bathroom. Tel. 7272 every room. *Resident Directors:* Mr. and Mrs. F. J. McInnes.

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SPREAD EAGLE HOTEL

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SPEND AUTUMN and WINTER facing South and overlooking Mount's Bay, at an Hotel which for sunshine cannot be beaten.

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100 bedrooms, modern bathrooms, and lift. Terms from 4 gns.
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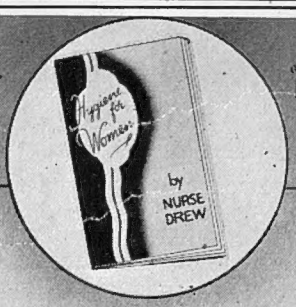


"HYGIENE FOR WOMEN" BY NURSE DREW

RENDELLS

PRODUCTS

FOR FEMININE HYGIENE

APPROVED BY DOCTORS

MINISTRY of HEALTH SAYS:
COUGHS & SNEEZES SPREAD DISEASES

VAPEX

The Magic Drop

WILL STOP THAT COLD

USE VAPEX at the first sign of a cold and it will be cleared promptly and safely. Breathing VAPEX removes the stuffiness by penetrating to the source of the infection—the warm recesses of the nose and throat—where it destroys the breeding germs.

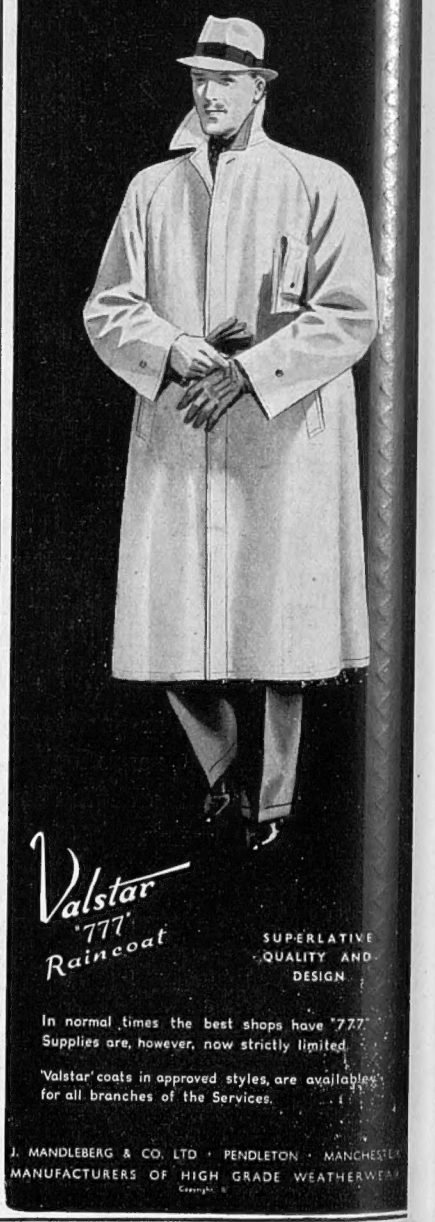
If you have let your cold develop, VAPEX will shorten the attack, ease the breathing and clear the bronchial passages.

A drop on your handkerchief

Simply sprinkle a 'magic drop' of VAPEX on your handkerchief and breathe deeply from it frequently during the day. At night put a drop on the end of your pillow. All symptoms of your cold will soon be gone.

From your Chemist, 2/3 & 3/4

V217A THOMAS KERFOOT & CO. LTD.



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SUPERLATIVE QUALITY AND DESIGN

In normal times the best shops have "777". Supplies are, however, now strictly limited.

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we are sorry

—but these fine lamps are now very scarce

IF you have an Anglepoise Lamp, treasure it, as only by hard searching in the shops will you be able to come across another. They are playing their part elsewhere—which explains their scarcity. So we ask for your patience.

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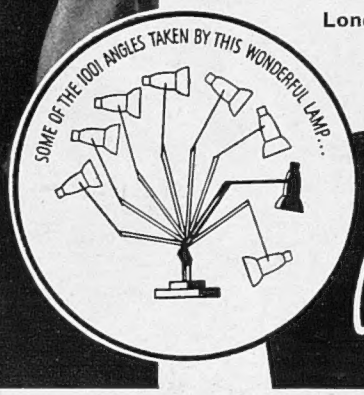

TERRY *Anglepoise* LAMP

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A gentleman who used to be one of our most respected civilian customers appeared on our threshold, trimly clad in blue and gold, and announced that he was "a rough, tough, seafaring chap" who'd "stepped ashore to buy a bridge coat and look slippy about it." This was no sooner said than done. "How you people keep up your pre-war standards of speed and efficiency beats me," were his parting words. Indeed, we do our modest best, not only in the way of ready-to-wear greatcoats for the Senior Service, but also Great-coats, British Warms, Uniforms and equipment for officers in all three Services. "Ready for *immediate* wear" is no exaggeration at Moss Bros.

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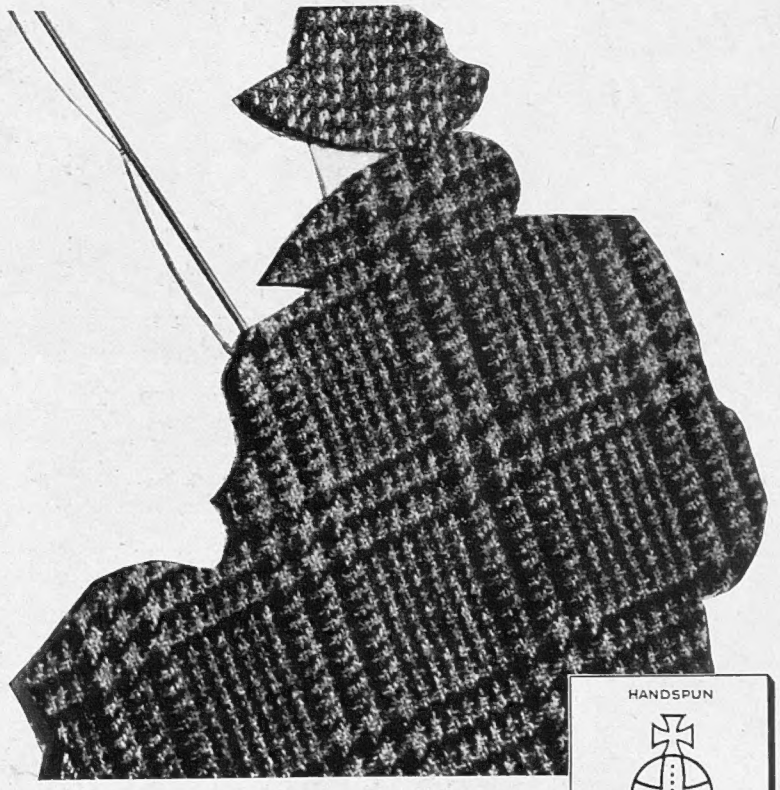

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Born 1820—still going strong

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